Accessible Communications

Tapping the potential in public ICT procurement policy

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A consumer research report by the University of Wollongong and GSA Information Consultants

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Accessible Communications -
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Australian Government Information Office (AGIMO)
Australian Human Rights Commission
Australian Network on Disability (AND)
Department of Broadband, Communication and the Digital Economy (DBCDE)
Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA)
Media Access Australia

ACCAN Foreword

Australia has a history of early adoption for all things digital. While information and communications technologies continue to advance in ever-shortening development cycles, advances in technologies that are usable and accessible by people with disabilities struggle to keep up. This University of Wollongong research project, funded by the Australian Communications Consumer Action Network (ACCAN), explores how government procurement policy can have positive implications for many consumers with disability; providing greater access to the digital economy of the 21st Century.

ACCAN is pleased to be associated with this research; it is an area that our members identified early on as being key in the improvement of access and participation in technology for Australians with disability. In 2009, ACCAN's Gov 2.0 Roundtable highlighted public procurement of accessible ICT as being the cornerstone of social inclusion in the Government's Gov 2.0 strategy. This research project provides part of the evidence base that has been lacking in the policy arena; delivering the foundation and resource for strategic change in public procurement across all levels of government.

While much of the research utilises international examples of government best practice, there is no better demonstration of the power the public purse wields in its market influence than our own Government's provision of the 'talking' set-top box.

As Australia began switching from analog to digital only television in 2010, many Australians who are blind or vision-impaired were no longer able to independently operate their television. On-screen menus, program guides and increasing numbers of channels require visual navigation. The solution to this inaccessibility is digital televisions or digital set-top boxes with audio-enabled navigation. While 'talking' set-top boxes were available in overseas markets, Australian manufacturers were reluctant to introduce these products in Australia. In a market without usable and accessible digital set-top boxes, a significant number of Australians were at risk of being left without access to our foremost medium for news, information and entertainment as we switched to digital broadcasting.

The Australian Government's Digital Switchover Taskforce oversees the transition from analog to digital broadcasting. To ensure that vulnerable households have the assistance they need, the Household Assistance Scheme (HAS) provides a range of services including set-top boxes to eligible households. In order to provide equity of access to all eligible households the HAS, in 2011, commissioned a trial of 'talking' set-top boxes for eligible Australians who are blind or vision-impaired. The HAS trial required Australian manufacturers to provide these talking set-top boxes as part of their contract. As a result of the trial's success all eligible HAS participants who are blind or vision-impaired will receive these fully accessible 'talking' set-top boxes. The roll-on effect of this Government funded initiative is that two Australian manufacturers of digital set-top boxes now offer commercially available 'talking' set-top boxes in the wider Australian market.

This case study re-emphasises the importance of this research report and related Advocacy Toolkit. Both identify the vital role public procurement of accessible ICT can play in the expanding availability of accessible devices. Accessible ICT increases employment opportunities, raises our productivity and can reap benefits for Australians living with disability.

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Glossary

Design for All	A design philosophy targeting the use of products, services and systems by as many people as possible without the need for adaptation (related to inclusive design and universal design)
EU	European Union
ICT	Information and communication technologies - (see Section 1.1.2 for further explanation about use of this term)
Inclusive Design	Refers to a broad spectrum solution for products, services, environments and facilities that are usable and effective for everyone (related to Design for All and Universal Design)
NGO	Non-government organisation
Universal Design	A design philosophy targeting the use of products, services and systems by as many people as possible without the need for adaptation (related to Design for All and inclusive design)
W3C	World Wide Web Consortium – international community for web standards (www.w3c.org)
WCAG 1.0	W3C/WAI Web Content Accessibility Guidelines. The earlier version of WCAG 2.0
WCAG 2.0	W3C/WAI Web Content Accessibility Guidelines. The WCAG 2.0 uses three levels of accessibility with priority A (lowest level), AA and AAA (highest level).
WTO-GPA	World Trade Organization General Agreement on Procurement. (See Section 1.1 for further explanation)

Executive Summary

The report explores the connection between government purchasing (usually called public procurement) of information and communications technologies (ICTs) and improving outcomes for people with disabilities.

Accessible ICTs are defined in this report 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).

In general, Australia has opted to let the market determine whether accessibility features are included in any response to government procurement processes. On this score, Australia lags behind the majority of OECD countries, which have included ICT accessibility criteria in their public procurement regimes.

Research design

The project collected the latest available information about accessibility in ICT government purchasing in OECD countries and assessed this information in relation to steps that need to be taken for ICT public procurement in Australia.

Four principal methods were applied to the research design: systematic analysis, benchmarking, case study and focus groups. English language sources from OECD member countries were used to benchmark countries in relation to their use of ICT accessibility criteria in public procurement, which, in turn, identified cases for in-depth case study analysis. 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 also conducted with key stakeholders from government and industry.

The key output of the research is a synthesis of world's best practice interlaced with local knowledge drawn from Australian stakeholders. This report will help people with disabilities to be more informed about global progress on accessibility and public procurement of ICTs.

This report forms the basis for the accompanying Advocacy Toolkit designed for use by disability organisations.

Research findings

The findings from this research support the introduction of accessibility criteria in the procurement of ICTs and related services. The case studies detail the benefits of including mandatory accessibility criteria in public procurement policy but found that voluntary accessibility criteria did not produce similar effects to mandatory criteria. Indeed, the report argues that the mainstreaming of ICT accessibility criteria through mandatory application is potentially transformative.

Once accessibility criteria are signalled by government as part of their purchasing strategy, greater certainty for manufacturers is created. Companies that already have accessibility features in their products are more competitive when government considers tenders. This in turn encourages

competitors to innovate for improved accessibility. With additional demand, costs for components fall[1] making accessible products more affordable, not only to government but to the private sector and the community in general. Indeed, the private sector has an important role to play in adopting a policy to procure accessible products.

The availability of cheaper accessible ICTs addresses a number of factors that contribute to the digital divide that is often acutely experienced by people with disabilities. Reducing the digital divide for people with disabilities makes a positive contribution to achieving equality.

Applying mandatory accessibility criteria in ICT purchasing signals an employer's commitment to improving equality for people with disabilities. 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.

Mandatory accessibility criteria also signals to the general public the Government's commitment to equality for people with disabilities. The Australian Government Information Office (AGIMO), within the Department of Finance, has been active in addressing this need through their adoption of web accessibility guidelines in WCAG 2.0. It is worth noting, however, that this is just a partial response to the issue of accessibility criteria for ICTs. Even though Australia has introduced mandatory web accessibility guidelines for Federal Government agencies, it does not have any criteria for ICT accessibility criteria for office technology such as computers, mobile phones and other telecommunications devices.

Mandatory accessibility criteria in public procurement is required to counter possible dumping of ICTs in Australia that are not compliant with accessibility regimes in other countries. The United States is currently updating its accessibility standards as they apply to public procurement of ICTs by their federal government and many of their state jurisdictions. The European Union is well advanced in developing a set of accessibility standards that are set for inclusion in the next round of Directives on public procurement for use by member countries. There is even work being done for proposed European accessibility legislation that will make accessibility criteria in public procurement mandatory. There is a real possibility that office and telecommunications technologies that are not suitable for these markets will be directed to those that are not protected by accessibility provisions.

The challenges

There are a number of challenges that make the mandatory adoption of accessibility criteria when purchasing ICTs (or related services) less than straightforward. The dominant issue is the relative lack of knowledge about ICT accessibility. This has led to key government agencies in the USA, Canada and Ireland developing awareness-raising programs and toolkits. This is even the case in the USA, which is recognised for the comprehensive nature of their mandatory accessibility standards as well as the legally binding compliance mechanisms for federal agencies. The re-appraisal of their Section 508 standards has been lengthy leading to some frustration by industry.

As a new and developing body of knowledge, accessibility criteria are yet to be fully recognised in education and training courses. This has significant implications for the up-skilling of the numerous stakeholders, ranging from designers, to disability liaison officers to IT support staff to people with disabilities themselves, in the process of providing accessible ICTs to people with disabilities.

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[1] This can be seen in text-to-speech synthesising chips (integrated circuits) which have become cheaper as demand for these chips has led to increased production (Yamada, 2007).

Setting accessibility standards is further complicated by changes in technology and related terminology. Is a 'smartphone', a telephone or a web browser or PDA (personal digital assistant)? In recognition of this, there has been a shift to the development of functional criteria which are less prescriptive but more difficult to use when quantitatively comparing products.

It is for this reason that this report presents a set of recommendations that address the fundamental challenge of developing ICT accessibility as a new area of knowledge. Processes need to be put in place to encourage learning within a diverse range of communities: people with disabilities, disability liaison officers, designers, manufacturers, vendors, IT support staff, and others.

Recommendations

A list of recommendations based on the report's analysis offers a staged transition in the implementation of ICT accessibility criteria in public procurement. The background for these recommendations is explained in more detail in the report. The recommendations are divided into short-term (within one year), medium-term (two to four years) and long-term (four to six years).

Short-term

- **Recommendation 1** Representatives from disability groups work to promote understanding of accessibility issues in ICTs in relation to public procurement. To support that work, ACCAN be requested to initiate a workshop of key consumer and disability advocates.

- **Recommendation 2** A roundtable be organised of key stakeholders from government, industry and the disability sector to discuss the issue of ICT accessibility criteria for public procurement in Australia. Key stakeholders are Department of Finance and its Australian Government Information Management Office (AGIMO), Australian Human Rights Commission, Australian Public Service Commission and ACCAN.

- **Recommendation 3** Disability representatives use the Advocacy Toolkit to encourage local, state and federal politicians to lobby for public procurement of accessible ICTs and for the Productivity Commission to undertake a cost-benefit study on the incorporation of accessibility criteria in ICT public procurement.

- **Recommendation 4** An online resource be established to promote information sharing about the latest international developments of accessibility criteria in ICT public procurement.

Medium-term

- **Recommendation 5** Disability and consumer advocacy groups consider options for developing training programs to build and broaden the knowledge and skills base of disability advocates when representing their constituents on technical committees such as for the development of accessibility guidelines in public procurement. Government funding be made available to support these programs.

- **Recommendation 6** Recognition be given to expertise in accessibility and universal design by professional bodies such as the Australian Computer Society (ACS) and the Institute of Electrical and Electronic Engineers (IEEE).

- **Recommendation 7** University and TAFE courses integrate accessibility and universal design in their teaching of relevant web design and computing courses.

- **Recommendation 8** Accessibility criteria and relevant assistive technologies be explicitly recognised in corporate and government ICT testing regimes.

- **Recommendation 9** The Australian Human Rights Commission establish a universal design information program based on specified areas for future action in the Commonwealth Government's National Disability Strategy. The Commission be provided with additional resources to take on this role that includes developing or adapting existing information material to build an understanding of ICT accessibility among government departments and industry.

Long-term

- **Recommendation 10** AGIMO be encouraged to set up a pilot project to incorporate voluntary accessibility criteria (based on accepted international standards) in tender documentation. This can be done to best effect as suppliers on AGIMO's procurement panels renew their supplier status.

- **Recommendation 11** A transparent and reliable monitoring system be established by AGIMO (in association with the Australian Human Rights Commission and with input from the disability sector) so that the purchase of accessible ICTs in government departments and agencies can be assessed within a set timeframe.

- **Recommendation 12** The government introduce mandatory accessibility criteria in ICT purchasing if the results of the monitoring system indicates that the introduction of accessible ICTs has not reached an acceptable level.

1. Introduction

The topic of Government ICT purchasing seems esoteric and its significance as a vehicle for equality for people with disabilities is not widely recognised.

To address this, this research report explores the connection between government ICT purchasing and improving outcomes for people with disabilities through accessible ICTs. Accessible ICTs are defined in this report 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).*[2]

Government purchasing, usually called public procurement, refers to the financial processes that governments engage in to purchase goods and services, mainly from the private sector, to enable it to carry out its various functions (McCrudden, 2007, pp. 2-3).

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 (Waddell, 2009). 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.[3]

For the most part, the purchase of accessible ICT products is still not an explicit requirement for government instrumentalities at the federal or state level in Australia. As a consequence, there is a clear need for a consumer-oriented plan to work with governments to ensure that accessibility requirements in ICT government purchasing is placed firmly on the agenda.

1.1.   Background

1.1.1.   Public procurement

In order to better understand the context in which ICT government purchasing occurs it is useful to briefly explore the topic of public procurement (as it is formally called). Government, by virtue of its spending power, represents a significant player in the economy and can influence the market in numerous ways. Hence, public procurement can be used to shape outcomes in a number of areas. As Waddell (2009) outlines, the various goals of public procurement include:

- To stimulate national economic activity
- To protect against foreign competition
- To improve competition in certain economic sectors

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[2] 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, 2011).

[3] Narasimhan (2010) 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

- To remedy regional disparities
- To achieve specific social policy goals

Government is able to influence the availability and costs of goods and services by virtue of the various roles it plays in the economy as a:

- buyer of goods and services
- supplier of services and
- regulator (EU, 2011c; McCrudden, 2007, p. 2).

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 as a tool for social policy is something that has gained recent prominence (Waddell, 2009). However, it would not be correct to conclude that there is little historical interest in the topic of government purchasing to address social policy goals. McCrudden (2007, p. 4) traces the use of government contracts as a means to employ ex-servicemen from World War I who were disabled as a consequence of injuries sustained during the war. After World War II he finds that this concept was expanded to include people with disabilities in the general population when 'sheltered workshops' were established which supplied goods to government under preferential arrangements.

Even though the use of government purchasing as an instrument of social policy is not new, it is still an area of public policy that is not well understood. McCrudden (2007) finds that it is difficult to organise a research strategy in public procurement around the concept of social justice. He defines the goal of his research as 'attempts to eradicate unjust discrimination and advance the status of equality' (p.3).

There are a number of examples in which public procurement has been used to advance various social policy agendas in Australia. Public procurement has been used to penalise companies that had not adopted equal opportunity policies. During the 1990s, companies that did not lodge an affirmative statement pertaining to the employment of women were barred from tendering for government contracts (McCrudden, 2007, p. 7). A similar idea was discussed in the Productivity Commission's (2004) Review of the Disability Discrimination Act (Vol 1 p. 450). Interestingly, the Productivity Commission (2004, pp. 459-460) was ambivalent about the use of public procurement as a vehicle for change to improve outcomes for people with disabilities.

Australia also uses 'set-asides' in its public procurement policy. Set-asides give permission to government procurers to set aside certain conditions to enable companies represented in disadvantaged sectors of the community to apply for government contracts using a less stringent set of guidelines. (McCrudden, 2007, pp. 8-9). In Australia, set-asides have been granted to businesses that employ a large number of people with disabilities as well as businesses in which indigenous people figure prominently.[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. A publication titled *Buying Social - A Guide to Taking Account of Social Considerations in Public Procurement* provides a detailed set of case

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[4] See Australian Government Procurement Statement at
http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22media%2Fpressrel%2FDX8U6%22 Retrieved 16 June 2012

studies in *Socially Responsible Public Procurement (SRPP)* which demonstrate the potential of public procurement for achieving a range of social outcomes (EU, 2010a, p. 5). This includes gaining greater employment opportunities for people with disabilities (p. 7).

It is noteworthy how the focus of these initiatives has moved to providing a more certain context in which manufacturers can innovate new products (EU, 2011c). Governments in the EU spend 17% of their gross domestic product on procuring goods and services so any socially-related requirements that may be imposed in tenders translate into commercial drivers for suppliers (EU, 2010a, p. 5). Hence, the market place is given strong incentives to innovate to address needs that otherwise may not have been commercially viable.

Since the 1970s, many of the changes in public procurement legislation throughout the world can be linked to international agreements to reduce barriers and make international trade more efficient (McCrudden, 2007, pp. 95-113). The first of such Government Procurement Agreements (GPA) was concluded on 1 January 1981. Governments that were party to the agreement agreed to accord to the products and suppliers of each other party "treatment no less favourable" than that experienced by their own country's producers and suppliers. The second significant GPA was concluded on 15 December 1993 as part of the Uruguay Round of trade negotiations. The purpose of this new agreement was to extend coverage to construction works and other similar services and to include sub-national entities such as states and municipalities (McCrudden, 2007). Management of the GPA is the responsibility of the World Trade Organization (WTO). Accordingly, the potential of public procurement regimes to shape social outcomes is not lost on those who look to international GPAs and wonder whether social policy goals, such as global accessibility standards for ICTs, will one day be included in international trade agreements.[5]

1.1.2. The potential of accessible ICTs

Given the scope of programs designed to assist people with disabilities, why should accessible ICTs warrant specific attention? The following discussion suggests that ICTs play a complex, perhaps, duplicitous, role in the lives of people with disabilities. On the one hand, ICTs have the potential to improve access to information not previously possible. On the other hand, ICTs have also been implicated in the creation of barriers that prevent equitable access to opportunities because the World Wide Web is increasingly used to publish information.

In seeking to understand improved opportunities for access to information that ICTs provide, it is useful to make a distinction between the term 'accessible ICTs', as defined in this report's introduction, and the related term 'assistive technologies'. Assistive technologies are designed to meet specific needs of people with disabilities that are not available in mainstream technologies. The U.S. Access Board's definition of assistive technologies is:

> *any item, piece of equipment, product system, whether acquired commercially, modified, or customised, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.*[6]

As the Canadian Workplace Accommodation Toolkit states, an assistive device

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[5] Marc Steiner from the Swiss Federal Administrative Court discusses the possibility of social outcomes being incorporated into WTO procurement regulations in a presentation to NCCR Trade Centre at the University of Bern. Retrieved from http://www.nccr-trade.org/events/ilo-core-labour-standards-and-wto-government-procurement-agreement-conflict-or-coherence/ on 29 April 2012.
[6] See http://section508.gov/index.cfm?fuseAction=AssistiveTechDevices Retrieved 24 March 2012.

> *differs in concept from a universally designed mainstream product because the barriers faced by some people cannot be overcome without specific, personalised intervention.*[7]

While assistive technologies play an important role in the use of ICT by people with disabilities, the preference is always that as many of these features as possible are incorporated into mainstream technologies. This is what is meant by the term accessible ICTs. This has been the case with speech to text software, which began as an assistive technology but became a standard feature in modern computer operating systems. It is also the case with screen reading software for blind people, which, up to recently, was an assistive technology but is now built into computer products designed by Apple and Microsoft. Another feature of accessible ICTs is that the ICT system (hardware and software) should seamlessly interconnect with the technology when it is not feasible to mainstream an assistive technology.

Broader expression of the goals that accessible ICTs seek to achieve is found in the practice of universal design. According to the Centre of Excellence in Universal Design in Ireland, the concept of universal design refers to

> *the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability.*[8]

The need for the incorporation of universal design in new products becomes more pointed because conventional ICTs have been implicated in creating barriers for people with disabilities. A 2002 report by the National Disability Council in the USA argues that

> *paradoxically, at the very time when many people comfortably assumed that technology is steadily bringing people with disabilities more opportunities for access than they have ever known before, this same technology (coupled to the attitudes and expectations of those who use it) may in many cases be reinforcing patterns of exclusion and isolation (cited in Fotopolus, 2006, p. 96).*

The report goes on to cite the shift from menu-based user interfaces on computers to windows-based interfaces during the late 1990s as being a significant set-back in achieving accessibility for people with disabilities.

The digital divide

Research in the EU links socio-economic factors to systemic limitations in ways people with disabilities experience ICTs. Work undertaken by Vicente and Lopez (2010) using data from the eEurope 2005 Project,[9] funded by the European Commission's Information Society Technology (IST) program, discovered a number of notable trends in the use of ICTs by people with disabilities. For example, they discovered that socio-economic barriers are more acute for people with disabilities for two main reasons. Firstly, a higher proportion of people with disabilities live below the poverty

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[7] See Workplace Accommodation Toolkit, http://www.apt.gc.ca/wat/wb10009E.asp Retrieved 25 October 2011.

[8] See http://www.universaldesign.ie/exploreampdiscover Retrieved 5 April 2012.

[9] See the archived eEurope 2005 website at http://ec.europa.eu/information_society/eeurope/2005/all_about/benchmarking/index_en.htm Retrieved 22 March 2012

line than do the general population. Secondly, low economic status makes the purchase of equipment more difficult because assistive technologies are more expensive.

Vincent and Lopez's (2010) research also found that a heightened level of fear of computers pervaded people with disabilities. The authors indicated that limited access to education for people with disabilities reduced opportunities to learn how to manage information, particularly in the online environment. The authors also found that assistive technologies tended to lag significantly behind the development of mainstream software.

This confirms a view that the nature of discrimination against people with disabilities is perhaps less overt and more systemic in nature when considering ICTs. Waddell (2010) identifies a lack of accessible ICTs as one such systemic barrier that prevents equitable access to what ICTs have to offer to able-bodied people. From this perspective, one can see that the increased availability of accessible ICTs could ameliorate systemic barriers that prevent full participation in society by people with disabilities. The absence of accessible ICTs can therefore be likened to a form of discrimination that qualifies it for action under anti-discrimination provisions.

ICT accessibility criteria vs web accessibility criteria

One final comment about ICTs is about the impact that the Internet has had on people's understanding and use of ICTs. It is necessary to draw a distinction between accessibility as it relates to computers and telecommunications devices and related software, and accessibility as it refers to the design of web pages on the Internet. While the two areas share much in common they are not substitutes for each other. For example, it may be possible for some countries, such as with the case of Australia, to be recognised for the adoption of the Web Content Accessibility Guidelines (WCAG)[10], but still fall short in their adoption of accessibility features when they purchase computers and telecommunications devices (EU, 2011e, p. 87 & 102). For example, accessibility features for telecommunications equipment may specify larger buttons for a handset, which the WCAG guidelines do not specifically refer to.

Accordingly, the use of the term ICT assumes that the full gamut of information and communications technologies, including web accessibility, is being referred to. By way of example, the categories (listed below) used by the U.S. Access Board in their Section 508 accessibility standards reflect the comprehensive nature of these criteria.

- Software applications and operating systems
- Web-based information and applications
- Telecommunications products
- Video and multimedia products
- Self-contained, closed products
- Desktop and portable computers

This provides an insight into the potential for confusion when dealing with accessibility criteria. Accessibility is not a one-size-fits-all concept (Jaeger, 2006). So questions that determine how a system is inaccessible to different user groups are important in generating an accurate picture about the experience of people with disabilities as they use ICTs. This underlines the need for early

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[10] WCAG (Web Content Accessibility Guidelines) are accessibility standards that have been developed by an international partnership of private sector and public sector groups under the umbrella of the non-government organisation called w3c.org.

involvement of people with disabilities when new ICTs are being considered (Goggin & Newell, 2000, p. 130).

These issues are not insurmountable and as organisations develop experience with ICT accessibility criteria, new modes of organisation seem to emerge. To give an indication of what is possible, Box 1.1 describes an innovative approach taken by the United Kingdom (UK) Government's Revenue and Customs Department in implementing their accessibility policy.

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Taking action in the HM Revenue & Customs (HMRC)

A new system has to be tested for accessibility before it can move from the build and test stages to implementation.

Testing is conducted on three levels:

1. Developers test the system against HMRC's accessibility standards, based on the web content accessibility guidelines (WCAG) AA.

2. The IT partner's accessibility team oversees testing with ATs such as JAWS screen reader and Dragon speech recognition software.

3. HMRC's Corporate Responsibility and Diversity Directorate (CR&D) appointed a Disability Network Coordinator to represent the views of a network team, each with specific ICT needs and expertise, to senior management. The team is responsible for three key user acceptance tasks:

- confirming developers' conclusions on accessibility of the system
- evaluating the usability of the system to ensure that, while it meets accessibility standards, it is usable
- raising issues with, and providing feedback to, the Disability Network Coordinator.

An IT Accessibility Lead Architect from the Solutions Architecture team is available to provide advice to all projects.

(Ashington, 2009, pp. 25-26)

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Box 1.1 UK Government Revenue and Customs Department's ICT accessibility strategy

1.1.3.   Understanding policy contexts

The policy contexts into which the report delves are diverse. In order to assist policy advocates, the report writers make some assumptions about the differing policy approaches that are relevant to public procurement, accessible ICTs and disability rights. The report writers have attempted to do this on the basis of published academic perspectives on relevant policy debates but realise that this is a simplification that may not address the variety of policy backgrounds that readers bring to the topic.

One metaphor that came to dominate our thinking about how to interpret the efforts of different countries to address the question of accessible ICTs was the one of 'carrots' and 'sticks'. The two metaphors represent two areas of discourse that can be broadly described, respectively, as a market approach and a human rights approach; the carrots refer to non-regulated market incentives while the sticks refer to regulations framed by human rights principles.

We found that three lines of thought provided a significant degree of insight into these issues.

1. Market economics. In its purist form, market economics reasons that the most efficient method to deliver goods and services, including accessible ICTs to people with disabilities, is through supply and demand with no or minimal government involvement. A number of commentators identify this line of thought as being influential in Australian government policy from the late 1980s (Campbell, 2000; Goggin, 2002; Joseph, 1993; Pusey, 1991).

Those who wish to develop social development initiatives based on market economics frame their responses in terms of improved commercial outcomes (Hall & Midgley, 2004). This is the basis of Innes' (2011) win-win argument in favour of accessible ICTs in public procurement. In a speech to the Department of Finance, Innes (2011) raised the issue of public procurement as a strategy that could be used to address disparities in the employment of people with disabilities in the public sector. The speech is notable for the focus Innes develops on the economic significance of people with disabilities to Australia in terms of their future economic potential. With the demographics of Australia set to change markedly with its ageing population, developing improved efficiencies from a declining pool of workers should logically include greater employment opportunities for people with disabilities.[11]

2. Market failure. This reasoning is used to justify government intervention in the economy to achieve an outcome deemed important but without sufficient commercial impetus to make it financially sustainable. Market failure, as defined by Alban and York (2006), is

> *a gap between what 'society' is prepared to pay for [an outcome] and the cost to the 'economy' of supplying that [outcome].*

Market failure is used to justify government interventions that assist people with disabilities in a range of areas. These interventions need not be carried out by government directly as the private sector can be paid to deliver such services. This is the basis of initiatives by government where efforts to integrate people with disabilities in employment are carried out using specialist employment consultants and payments for 'reasonable adjustments' to office environments including provision of equipment to accommodate newly appointed staff (Dept of Families, 2008, pp. 7-11).

3. Innovation theory. This theory has been used to justify the use of public procurement by government to influence the innovation activities of manufacturers (Edler et al., 2005). The crux of this approach to innovation research is how best to use public money to influence the pace and direction of innovation. Two sides to this debate have been described in terms of competition between supply-side research and development (R&D) expenditure on the one hand and demand-led purchasing by consumers on the other hand.

In arguing in favour of the latter, Edler and Georgiou (2007, p. 950) state:

> *A range of studies have argued that a major task for systemic innovation policy is the organisation of a discourse between users, consumers and others affected by innovations in order to articulate and communicate preferences and demand to the market.*

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[11] This view is confirmed by research sponsored by the OECD where Koutsogeoropoulou (2011) argues that the labour force could be increased by 5% if unemployed people with disabilities were able to obtain work.

Given a government's spending power, they go on to say that public procurement is a strong signal that manufacturers respond to. This is consistent with Hubby's comments when speaking about Adobe's response to government requirements.

> *When government says you need to build technology a certain way, for vendors like ourselves that's a very compelling maxim. We need to build products that can be sold to the government (Marsan, 2001 cited in D'Aubin, 2007).*

By creating a more stable and certain context for the supply of accessible ICTs, vendors appear willing to build products on the basis that there is a 'level playing field'. For example, IBM states that "it supports the spirit and intent of regulatory activity that creates an inclusive environment with respect to the use of IT but we believe that these regulations should be objective, attainable and standards-based to provide a common set of base requirements that all vendors can work toward" (IBM, 2011).

Innovation theory also recognises a life-cycle approach to public procurement where initial costs are larger than when the technology has been in operation for a number of years (Edler et al., 2005). A number of notable examples of this relate to assistive technologies. The Kurzweil reading machine for blind people was later spun-off to the very affordable scanner in everyday use.[12] Another example is speech recognition software, originally designed for people with limited hand movements but now used at low cost in many IT applications.

While Australia has a limited ICT manufacturing base (ACS, 2010) and thus has fewer opportunities to influence the design of accessible products, there is still a very important role for inclusion of accessibility criteria in public procurement. Companies may use markets like Australia to sell its inaccessible products, which they cannot sell to governments that have accessibility criteria in their purchasing regimes. Thus Australia has the potential to become the dumping ground for inaccessible products (Productivity Commission, 2004, p. 457).

Furthermore, the absence of accessibility criteria in tender documentation may lead to existing accessibility features in equipment going unnoticed. If government has not specified accessibility features, then the supplier is not likely to focus on these features in their tender response.

1.1.4.   UN Convention on the Rights of Persons with Disabilities (UNCRPD)

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) exemplifies a rights-based approach to improving equality for people with disabilities.[13] 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, legislation 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 Optional Protocol aims to strengthen the implementation and monitoring of the Convention by enabling citizens of signatory countries to seek redress from the United Nations should all local forms of redress fail.

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[12] Read the inventor's story about the Kurzweil reading machines at http://www.kurzweiltech.com/kcp.html Retrieved 25 April 2012

13 Signatories and ratifications of the UNCRPD can be found at http://www.un.org/disabilities/countries.asp?id=166 Retrieved 16 May 2012.

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, p. 31).

In building on the work of Pal et al. (2010) a review of the UNCPRD was undertaken to draw out specific areas of relevance to ICT. Table 1.1 details these articles and sections. The scope of the UNCPRD is comprehensive and outlines an agenda for Australia to follow if it wishes to facilitate equal participation in society of people with disabilities through the use of ICTs.

The identification of work and employment in Article 27 of the UNCRPD on Work and Employment is of special significance to this research. Section (g) states that the employment of people with disabilities in the public sector is a measure that signatories are obligated to pursue in their efforts to reduce barriers to employment for people with disabilities. This makes uncomfortable reading when trends in the employment of disabilities in the Australian Public Service are noted.

The Australian Government has been criticised for its poor record in employing people with disabilities (ADDE, 2012; Dunlevy, 2011). The Australian Public Service Commissioner's (APSC) 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). Research conducted by the APSC suggests that the changing nature of work in the lower levels of seniority in the public service have impacted more heavily on people with disabilities than on other sectors of the population (APSC, 2006, p. 52). Innes (2011) casts some doubt on this argument by noting that the decline in employment has been across the board rather than just at the lower echelons of the APSC.

The role that ICT public procurement is seen to play in addressing disparities in the employment of people with disabilities is significant. At ACCAN's Government 2.0 Roundtable in 2009 Innes noted that the absence of accessibility requirements in public procurement in Australia was limiting opportunities for people with disabilities (ACCAN, 2009). The implications of ICT accessibility criteria were made clear to him when companies, keen to address accessibility requirements for supplying the US Government, ignore such requirements in Australia simply because they are not required to.

The Australian Government announced a National Disability Strategy designed to create a whole-of-government approach to addressing the needs of people with disabilities (Dept of Families Housing Community Services and Indigenous Affairs, 2008). This was adopted by the Council of Australian Governments (COAG) and is aimed at enabling people with disabilities to achieve their full potential (Council of Australian Governments, 2011). The provision of accessible ICTs underpins most if not all of these initiatives. The research detailed in this report is therefore timely because it addresses a fundamental need for people to better understand accessible ICTs and the various ways to mainstream this important issue within organisations in both the public and private sector.

Table 1.1 Summary of UNCPRD Articles and Sections pertaining to ICTs

Article	ICT relevant section
Article 3 (General Principles)	Section (g) requires Australia to achieve full participation in society for people with disabilities. As ICTs are increasingly linked to this concept through the term 'digital divide', effective use of ICTs is an implied outcome of this principle
Article 4 (General Obligations)	Section 1(g) outlines Australia's commitment to undertake or promote research and development of new technologies and give priority to technologies at affordable costs. Section 1(h) commits Australia to providing accessible information about assistive technologies
Article 9 (Accessibility)	Section 2(g) commits Australia to providing access to ICTs at an early stage, at affordable costs. Section 2(h) commits Australia to promoting the design, development, production, and distribution of accessible ICTs.
Article 20 (Personal Mobility)	Section (b) commits Australia to facilitating access to quality mobility aids and assistive technologies. Section (c) commits Australia to encouraging the assistive technology industry to conduct needs assessments of people with disabilities.
Article 21 (Freedom of expression and opinion, and access to information)	Section (b) commits Australia to facilitate the use of augmentative and alternative communication. Section (c) commits Australia to urging private entities with an Internet presence to provide information in accessible and usable formats. Section (d) commits Australia to influencing the mass media to broadcast information in accessible and usable formats.
Article 24 (Education)	Section 2 (a) requires Australia to include people with disabilities in primary and secondary education which assumes inclusion in ICT training and associated information-related skills
Article 26 (Habilitation and rehabilitation)	Section 3 requires that Australia promote assistive technologies in rehabilitation.
Article 27 (Work and employment)	Section 1(i) commits Australia to ensuring reasonable accommodation is provided to persons with disabilities in the workplace.

1.2.   Research design

People with disabilities will benefit in the long term from this report by being more informed about a cross-section of international in-depth case studies on accessibility and public procurement, and thereby, being better equipped to advocate for change in Australia. To that end, the goal of this research is to provide a foundation document about accessibility criteria in government ICT public procurement policy and practice.

The focus of the investigation was the research question:

> *what differences do ICT accessibility criteria in public procurement make for people with disabilities?*

The research design is in four parts; systematic review, benchmarking, case studies and focus groups. The research design seeks to bring together the latest available information about the use of accessibility criteria in ICT public procurement practices in OECD countries. It then seeks information from Australians with disabilities as well as practitioners who work with people with disabilities to gain a current Australian perspective. Together, this information is analysed to provide guidance for the 'next-steps' that need to be taken in Australia to better promote accessibility of ICTs for people with disabilities.

1.2.1.   Systematic review

Systematic reviews have their origins in medical research where evidence-informed policy and practice seeks to promote the implementation of effective health interventions within populations (Thomas & Harden, 2008). Initially used to compare the outcomes of quantitative studies, researchers have more recently adapted the principles of systematic review to qualitative research (Petticrew & Roberts, 2006). Key among these principles is the research question and inclusion criteria. This provides transparency to the research process.

Key questions about inclusion criteria in this research follow.

Population - Why was the OECD chosen for analysis?

The OECD countries were chosen because they represent the most economically advantaged nations in the world. Australia has been part of the OECD since 1971 and reference is often made to studies undertaken by the OECD to enable Australia to gauge its performance in a range of areas.

Language – Why were information resources largely restricted to English language websites?

The research proposal for this research stipulated the review of English language websites as a strategy to ensure coverage of OECD countries was given but costs were contained. Given the broad range of countries under review, many of which do not have English as their first language, it was possible in many cases to corroborate sources in English by using the translate function of the online web application provided by Google.

Publication Type – Is there a diversity of sources used to increase the scope of the analysis?

The information that was used in the research was from both academic and non-academic sources. The World Wide Web provided a critical resource, especially for accessing legislation and policies from various countries.

The questions that were used to guide collection of data can be found in Table 1.2.

Table 1.2 The list of questions used to systematically analyse information

1. Policy and Legislative
1.1 Is the country a signatory to the UN Convention on the Rights of Persons with Disability (UNCRPD)? If so, to what level? Is there national legislation that gives legal effect to the UNCRPD? If so, what is it and how does it function?
1.2 What is the national public procurement legislation called and how does it operate?
2. ICT Accessibility initiatives
2.1 Are there ICT accessibility criteria in the public procurement process? If so, are they compulsory or voluntary?
2.2 Are there web accessibility requirements for Government departments and agencies? Are they part of accessibility criteria for ICT procurement or separate? If separate, are they compulsory or voluntary?
2.3 What incentives or assistance exist to encourage compliance with accessibility requirements? (For example, legislated requirements, market-based incentives, web-based tool-kits, training, documentation)

1.2.2. Benchmarking

The goal of benchmarking is to identify areas of improvement; "what must be improved, finding ways of making those improvements and then implementing them" (Wainwright, Green, Ed, & Yarrow, 2005, p. 41). While originally used to identify factors that can lead to improvement in organisations, the principles of benchmarking have been adapted for this research to improve public policy (Andersen, Bjørnar, & Spielkavik, 2008).

The purpose of the benchmarking exercise in this research was to assess the differences between the various approaches to implementing ICT accessibility criteria in public procurement across OECD countries. This assessment summarises the key approaches and records these in tabular form.

The benchmarking instrument focused on two aspects of ICT accessibility criteria. The first concerned the expression of ICT accessibility criteria in public procurement law. The second concerned the transparency of these measures; whether there are monitoring mechanisms in place to evaluate the application of accessibility criteria.

1.2.3. Case studies

On the basis of insights developed while constructing the benchmarking table six cases were chosen for in-depth analysis. Case studies are an effective method to explore situations in which relationships between phenomena and context are intertwined (Myers, 1997). Exemplars were selected to illustrate the relative value of mandating a comprehensive set of ICT accessibility criteria

against voluntary measures that allow the market to respond with ICT accessibility criteria to the demands of people with disabilities. A number of in-country and international experts (see Acknowledgements) were contacted to provide feedback on the drafts and, where appropriate, their insights were included in the discussion to bring the analysis up-to-date.

1.2.4. Focus groups

Focus group sessions are an effective method of obtaining important information from lay people who have knowledge that can inform the research (Barbour & Kitzinger, 2001). Two focus groups were held; one in Melbourne and the other in Sydney. Participants were selected from key groups who represent the interests of people with disabilities. It was also an opportunity to inform participants of the implications of accessibility criteria in public procurement for improved access to employment for people with disabilities.

Refer to Table 1.3 for a list of questions that was used in group discussions.

Table 1.3 Focus group questions

1. What telephone, hardware and software have you used while working?
2. Have you needed particular workplace modifications to this equipment?
3. How did you experience this process?
4. How did the employer deal with these requirements?
5. Would you like to see this done differently and if so, how?
6. Are there any particular phone systems, hardware or software that you would like to use at work?
7. Are there any other workplace experiences with ICT that you would like to share?

Consultations with key stakeholders from government and, to a lesser degree, the private sector, were undertaken to gain first-hand perspectives of the current Australian situation.

The knowledge of the stakeholders and experiences of focus group participants provided useful insights into the information derived from the systematic analysis, particularly that which applied to Australia.

1.3. Advocacy toolkit

The advocacy toolkit that developed as a result of this research is intended to provide disability organisations with information that will assist them to press for change. The intent of the toolkit is that people who are time-poor and whose expertise have not allowed them to gain familiarity with the topic of ICT accessibility or public procurement can communicate important messages to decision makers and the public at large.

Other features of the toolkit can be drawn from the principles that go on to make an effective media strategy. Given the complexity of the debate it is necessary to distil a small number of key messages in plain language in the toolkit.

1.4. Structure of the report

The remaining parts of this report contain four chapters. Chapter 2 details the outcomes of the benchmarking exercise of the use of ICT accessibility criteria in public procurement in OECD countries. A selection of six in-depth cases is described in Chapter 3. These exemplars illustrate the diversity of approaches in addressing the need for ICT accessibility ranging from mandatory provisions to voluntary approaches. Following this, Chapter 4 summarises the use of ICT accessibility criteria in public procurement within Australia. Chapter 5 brings together an understanding of the benchmarking exercise, in-depth case studies, and the Australian case to develop specific recommendations for Australia. These recommendations, in part, inform the consumer advocacy toolkit.

1. Benchmarking

2.1.   Introduction

A benchmarking exercise was undertaken to provide a global perspective on the ways ICT accessibility criteria are applied to the purchase of ICTs by national governments in the OECD. ICT accessibility polices 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 this benchmarking exercise.

The attributes of the remaining countries are summarised in the following benchmarking tables. Table 2. summarises the extent to which ICT accessibility criteria is found in public procurement law in the studied countries. Table 2. provides a summary of the related issue of web accessibility criteria and its application. Readers who wish to discover more about each individual country can refer to country-specific summary tables in the addendum to this chapter.

2.2.   Benchmarking ICT accessibility criteria in public procurement law

A number of attributes were used to benchmark the countries that are summarised in this chapter's addendum. The rationale for these benchmarking attributes was to firstly gain an appreciation of the technical and legal status of ICT accessibility criteria in each country. To that end, countries were assessed firstly on the technical detail to which ICT accessibility criteria was described and secondly, on the legal status in public procurement law of such criteria (if found). The four attributes that were used to group countries can be found in Table 2.1.

Table 2.1 Benchmarking criteria that tested for technical and legal status of ICT accessibility criteria in public procurement law

ICT accessibility criteria **comprehensively** described in public procurement law
This category covered countries that defined ICT accessibility criteria in national standards that encompassed a comprehensive set of ICTs. Section 508 standards in the USA exemplified this description by describing criteria for software applications and operating systems, web-based information and applications, telecommunications products, video and multimedia products, self-contained and closed products, and desktop and portable computers.
ICT accessibility criteria **broadly** described in public procurement law
This category described countries where ICT accessibility criteria were expressed using examples and concepts to guide the application of law. Examples of such descriptions include (but are not limited to) alternative information channels, Braille writer, text to speech software, and speech to text software.
ICT accessibility criteria **acknowledged** within public procurement law
This category described countries that had provision for the application of ICT accessibility criteria in their procurement law but this was not described in detail and was non-compulsory.
Evidence of ICT accessibility criteria **not found** in public procurement law
This category applied to countries where it was not possible to find evidence of the application of ICT accessibility criteria in public procurement.

Further benchmarking criteria were applied to determine whether ICT accessibility criteria were monitored. The reasoning that was used to formulate these attributes was to see if any monitoring

schemes were in place, and if so, were these internal to government or conducted by external bodies independent to government. Table 2.2 describes the additional benchmarking criteria that were used to further qualify the groupings of countries.

Table 2.2 Benchmarking attributes that tested for monitoring regimes

External monitoring regime that makes a commitment to publish results
This category was used to describe situations where monitoring of ICT accessibility in public procurement was carried out by bodies that were external to government
External monitoring regime – but commitment to publish results not found
This category was provided should an external body not publish results of their monitoring[14]
Internal monitoring regime that makes a commitment to publish results
This category was used to describe situations where monitoring of ICT accessibility in public procurement was carried out internal to government (including statutory authorities) and results were either published or there was a stated commitment to publish results
Internal monitoring regime – but commitment to publish results not found
This category was used to describe situations where monitoring was carried out internal to government (including statutory authorities) and no commitment to publish results was stated
Evidence of a monitoring regime was not found
This category was used to describe countries for which it was not possible to find evidence of a monitoring regime in the available literature

2.2.1.   Benchmarking table

Table 2.3 summarises the findings of the benchmarking exercise. It can be seen from Table 2., that only two countries, the USA and Japan, were found to have comprehensive accessibility criteria that are mandatory in public procurement. 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 of 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.

The second category of ICT accessibility criteria includes more countries; Italy, Norway, Sweden and Spain. In referring to the detailed summaries at the end of the chapter, it will be found that, these countries have described ICT accessibility criteria in a variety of ways; Spain and Italy have broadly followed the Section 508 provisions while Norway has used the alternative concepts of universal design to describe ICT accessibility criteria. In Sweden's case, the broad 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, the relevant 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 of ICT accessibility criteria in public procurement.

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[14] This was not applicable to any of the countries that used external monitoring regimes so this category is not represented in the benchmarking table (Table 2.3)

Table 2.3 The application of ICT accessibility criteria in public procurement law within OECD countries

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 Evidence of a monitoring regime for the voluntary application of ICT accessibility criteria in public procurement was not found	
Austria, Belgium, Czech Republic, Denmark[i], Estonia, Finland, France, Greece, Hungary, Ireland[ii], Luxembourg, Netherlands, Poland, Portugal[iii], Slovakia, Slovenia, Switzerland, United Kingdom.	
ICT accessibility criteria *NOT found* in public procurement law	
Australia, Canada[iv], Israel, Republic of Korea, New Zealand, Turkey	

[i] Denmark makes available an online procurement toolkit to encourage purchase of accessible ICTs
[ii] Ireland makes available an online procurement toolkit to encourage purchase of accessible ICTs
[iii] Portugal is reported to include web accessibility criteria in public procurement regulations
[iv] Canada makes available an online procurement toolkit to encourage procurement of accessible ICTs

It is in the third category of ICT accessibility criteria being acknowledged in public procurement that most countries are represented. This is largely by virtue of a European Union (EU) Directive on Public Procurement that was issued in 2004 which was subsequently 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.[15]*

It was not possible to find evidence of official monitoring regimes in these countries though two countries had sophisticated online procurement toolkits that enabled accessible ICTs to be purchased.

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[15] Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0018:EN:HTML Retrieved 11 May 2012.

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. However, there is innovative activity in some of these countries. For example, South Korea has been active in developing national ICT accessibility standards but these are not mandatory. Canada has supported the development of an innovative online toolkit designed to guide purchasers through procurement decisions that are based on ICT accessibility principles but this is not a requirement that must be adhered to.

2.3.   Web accessibility criteria described in other areas of law

For the most part, governments have concentrated their efforts on developing web accessibility standards to enable equitable access to their websites and this has generally not required the involvement of government procurement staff. This can be 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. The documentation of this information in this research is to provide a more balanced representation of the efforts of these countries to promulgate ICT accessibility criteria through public policy instruments other than public procurement regimes.[16]

Table 2.4 Web accessibility criteria described in other areas of law

External monitoring regime that makes a commitment to publish results
France, Netherlands, Switzerland
Internal monitoring regime that makes a commitment to publish results
Austria, Czech Republic, Denmark, 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[i], Finland, Israel[ii], Poland, Turkey

[i] Belgium has an active NGO community group that is sometimes used to endorse accessible websites
[ii] Israel has an active NGO community group that is sometimes used to endorse accessible websites

[16] ICT accessibility criteria found in universal service provisions of telecommunications law was recorded in country summaries (when found) but was not included in the benchmarking exercise

In reviewing the country summaries in Section 2.6, it can be seen that most have used WCAG1.0 or 2.0 as their official standards. Another interesting aspect has been the involvement of disability groups in the monitoring of public agency websites. This was apparent in the case of France, the Netherlands and Switzerland. It was also the case for Belgium and Israel even though these governments appear to have not officially adopted web accessibility guidelines.

Referring to Table 2., it can also be seen that most countries opted for internal monitoring mechanisms. Close to half of the surveyed cases have committed themselves to public reporting of their compliance with web accessibility guidelines. At the time of writing, Australia had not done so. The extent to which monitoring regimes led to compliance was sometimes difficult to ascertain so in the interests of reliability has not been represented in the table. The more detailed country summaries record this information where available.

2.4.　　　Reflection and discussion of the benchmarking exercise

The benchmarking tables indicate a variety of approaches to applying ICT accessibility criteria. It can be seen that a range of legislative instruments have been used to address the needs of people with disabilities in their use of ICTs. The USA and Japan were found to be the only countries that make mandatory use of a detailed and comprehensive set of technical standards in public procurement.

However, are mandatory accessibility criteria the most productive avenue for the delivery of accessible ICTs to the broader community? In the USA, mandatory accessibility criteria only applies to federal institutions but has this had an impact in other areas of government in the USA? While the scope of application of ICT accessibility criteria is much broader in the Japanese government, are mandatory accessibility criteria effective if checks are not made for compliance?

For the most part, governments have concentrated their efforts on developing web accessibility standards to enable equitable access to their websites and this has not required the involvement of government procurement staff. This can be seen in the variety of ways that web accessibility criteria have been codified in administrative regulations (particularly e-Government strategies) as well as equal opportunity law. Are light touch voluntary methods that encourage adoption of accessible ICTs better than the mandatory application of comprehensive accessibility criteria in public procurement?

The selection of cases for in-depth analysis aims to develop a better understanding as to whether mandatory ICT accessibility criteria has made a difference to people with disabilities. Three cases were selected to provide an insight into regimes in which mandatory ICT accessibility criteria in public procurement exist and three cases in which non-compulsory application of ICT accessibility criteria in public procurement exist. In all of the latter three cases, significant efforts have been made by the countries to provide adequate sources of information as a basis for voluntary ICT accessibility criteria.

The USA and Japan became the focus of the research because of their comprehensive approach to ICT accessibility criteria and the mandatory nature of these provisions. Similarly, the Mandate 376 (M376) process in Europe is important to study as efforts are under way to develop a comprehensive set of ICT accessibility criteria for possible inclusion in EU Directives for public procurement. The implications of the M376 process are profound because adoption of these standards will flow on to all European countries, which are normally required to put EU Directives into national law.

The remaining three cases that provide a window on alternatives that encourage voluntary compliance are Canada, Ireland and the United Kingdom. Canada was chosen because of its contrasting stance on public procurement compared to that of its neighbour, the USA. Industry argues that the use of a sophisticated online toolkit to assist with purchasing decisions is sufficient to ensure the ICT accessibility criteria for people with disabilities are met. Ireland was chosen for the support that this country has given to independent institutions to promote the cause of ICT accessibility criteria through regulatory measures that are broad in their impact. A sophisticated online toolkit is also a feature of this case study as is Ireland's respected research capability in universal design. The United Kingdom was chosen because it has encouraged the role of the private sector in the development of ICT accessibility criteria in ways not seen in other countries.

2.5.   Conclusion

The benchmarking of OECD countries reveals limited adoption of ICT accessibility criteria. This is likely to change significantly after Mandate 376 has been completed thus requiring European countries to include ICT accessibility criteria in their ICT purchasing processes.

The majority of countries have embraced web accessibility largely adopted from W3C's Web Content Accessibility Guidelines (WCAG) 2.0. As argued in Section 1.1.1, this is not sufficient for accessibility criteria in government ICT purchasing. The following cases also explore whether mandatory or voluntary criteria are more effective in meeting the goal of diffusing accessible ICTs to the broader community.

2.6. Addendum to Chapter 2 – Country summaries

2.6.1. Australia[vii]

1. ICT Accessibility Criteria (ICTAC)	ICT accessibility criteria **partially** defined (web accessibility only) in finance regulations
2. Standard	WCAG 2.0
3. Monitoring and compliance	Reporting to Department of Finance, for consolidated reporting to government authorities and bodies (SIGB & OCC). Monitoring of progress by governmental reference group.
Comments	

[vii] See in-depth case in Chapter 4 for references

2.6.2. Austria

1. ICT Accessibility Criteria (ICTAC)	EU law Directive 2004/18 was adopted in the Bundesvergabegesetz 2006 – – BVergG 2006, BGBl. I Nr. 17/2006 idF BGBl. I Nr. 15/2010 (ETSI, 2009, p. 141) ICTAC **defined for web accessibility** through the Austrian e-Government Act that requires the public administration websites to be accessible by conforming to accessibility standards defined in WAI level A (Batusic, 2012)[viii] ICTAC **broadly defined** in terms of ICT products and services. The Federal Disability Equality Act requires public agencies to have their information technology accessible for people with special needs. The development of software applications for e-Government must comply with accessibility criteria (Batusic, 2012) [ix]
2. Standard	WAI level A[x] WCAG 2.0 recommended (Batusic, 2012)
3. Monitoring and compliance	Conformity with the WAI Guidelines (Level A) must be fulfilled in order to obtain the Austrian e-government Quality Mark, which demonstrates and confirms that a site fulfils the standards and specifications of the Austrian e-Government strategy.[xi]
4. Comments	The Austrian National Association of Deaf developed a tool to access written, signed text and voice on WebPages simultaneously. This was achieved by providing dubbed signed language video synchronised with text.[5]

[viii] See 'The Austrian E-Government Act' at http://www.a-sit.at/pdfs/e-govg_engl.pdf
[ix] Ibid.
[x] Ibid.
[xi] http://www.eaccessibility-progress.eu/country-profiles/austria/websites/

2.6.3. Belgium

1. ICT Accessibility Criteria (ICTAC)	ICTAC non-specifically referred to in public procurement guidelines[xii]
2. Standard	
3. Monitoring and compliance	No requirements for ICT accessibility exist beyond discretionary use in tender documentation (as per EU Directive 2004/18/EC) and no sanctions[xiii] 'AnySurfer' seal of approval is a *de facto* standard that organisations in Belgium can use to demonstrate compliance with WCAG 2.0 guidelines[xiv]
4. Comments	Comprehensive set of educational information and guidance available from Anysurfer organisation. Anysurfer is an organisation under the auspices of Licht en Liefde, a non-profit organisation for the visually impaired. They are also allied with other groups representing interests of disabled persons such as K-Point, WAI-NOT and the Federacy of Flemish Organisations for the Deaf[xv]

[xii] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010)
[xiii] Personal communication from Anysurfer organisation
[xiv] http://www.anysurfer.be/en/index.html
[xv] Ibid.

2.6.4. Canada[xvi]

1. ICT Accessibility Criteria (ICTAC)	ICTAC **partially** defined in Treasury Board guidelines (web accessibility)[xvii]
2. Standard	WCAG 2.0[xviii]
3. Monitoring and compliance	Published guidelines, procedures and reporting timetable for agencies heads and managers assisted by a web-based reporting tool to Treasury[xix]
4. Comments	Sophisticated online procurement toolkit and information available[xx] Recourse through the courts using human rights legislation possible[xxi]

[xvi] See also in-depth cases in Chapter 3
[xvii] http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?section=text&id=23844
[xviii] Ibid
[xix] Ibid
[xx] http://www.apt.gc.ca/ap10000E.asp
[xxi] http://www.at-links.gc.ca/as/zx21042e.asp#b1

2.6.5. Chile

The search for English language sources about ICTAC in Chile yielded insufficient information to include Chile in this benchmarking exercise.

2.6.6. Czech Republic

1. ICT Accessibility Criteria (ICTAC)	ICTAC **non-specifically referred to** in public procurement law[xxii] ICTAC **partially defined** (web accessibility standards) in public administration information systems law (by amendment of Act No. 365/2000) (EU, 2011f, p. 8)[xxiii]
2. Standard	Standards on e-accessibility according to WCAG 2.0 largely defined in Act 365/2000[xxiv]
3. Monitoring and compliance	Annual publication of web accessibility statement (EU, 2011f, p. 8) Monitoring of web sites by Ministry of Interior with public identification of non-compliant websites (EU, 2011f, p. 8)
4. Comments	

[xxii] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010, p. 31)
[xxiii] http://countryprofiles.wikispaces.com/Czech_Republic
[xxiv] http://countryprofiles.wikispaces.com/czaccessibility

2.6.7. Denmark

1. ICT Accessibility Criteria (ICTAC)	a. ICTAC **non-specifically referred to** in public procurement guidelines (DCCA, 2004)[xxv] b. ICTAC **broadly** defined (telecommunications devices) in universal service provisions in Telecommunications regulations and EU directive (MSAI, 2011, p. 13)[xxvi] c. ICTAC **partially** defined (WCAG 1.0) in Open Standards for Software in the public sector parliamentary agreement which are mandatory (OECD, 2010, p. 156)
2. Standard	WCAG 1.0 (MSAI, 2011, p. 14; OECD, 2010, p. 156)
3. Monitoring and compliance	a. Is up to relevant public agencies to decide whether to include accessibility criteria in public procurement relevant to a particular social purpose (DCCA, 2004)[xxvii] b. Bi-annual survey of web accessibility by National IT and Telecomm Agency (NITA). 2011 survey for web accessibility compliance indicates less than half of government websites are WCAG 1.0 compliant. The mandatory use of accessibility standards contains an obligation to explain non-compliance under the 'comply or explain principle'. Offending departments are given the opportunity to publicly explain why they were not able to achieve required standards (MSAI, 2011, p. 14)
4. Comments	Sophisticated procurement toolkit is available for use. (EU, 2007, p. 7)

[xxv] http://www.kfst.dk/en/udbudsomraadet/udbudsregler/legislation/
[xxvi] http://en.itst.dk/telecom-internet-regulation/filarkiv-obligations-for-suppliers/executive-order-on-the-provision-of-electronic-communications-networks-and-services
[xxvii] http://www.kfst.dk/en/udbudsomraadet/udbudsregler/legislation/

2.6.8. Estonia

1. ICT Accessibility Criteria (ICTAC)	a. ICTAC **acknowledged** in public procurement guidelines[xxviii] B. Inclusion and accessibility are broadly defined in 'Estonian IT Interoperability Framework' (ministerial regulation)[xxix]
2. Standard	WCAG 1.0 or 2.0 – Level A is given priority[xxx]
3. Monitoring and compliance	The principle that ensures citizens are able to provide feedback on the quality of online services is expressed in Estonian IT Interoperability Framework[xxxi] Monitoring of websites foreshadowed[xxxii]
4. Other incentives to comply	
5. Comments	

[xxviii] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010, p. 43)
[xxix] Inter-operability principles http://www.riso.ee/et/koosvoime/interoperability-framework.odt
[xxx] Web framework principles http://www.riso.ee/et/koosvoime/web-framework.odt
[xxxi] Inter-operability principles http://www.riso.ee/et/koosvoime/interoperability-framework.odt
[xxxii] Estonian Information Society Strategy
http://www.riso.ee/en/system/files/Estonian%20Information%20Society%20Strategy%202013.pdf

2.6.9. Finland

1. ICT Accessibility Criteria (ICTAC)	The ICTAC is **broadly defined** for ICT services. The procurement legislation in Finland is called the Finnish Act on public procurement Laki julkisists hankinnoista (348/2007) and implements the EU directives 2004/18/EC [i 25] and 89/665 [i 12] (ETSI, 2009, p. 146). There is no specific e-Accessibility legislation. The Equality Act (L21/2004) Finnish Law transposed the EU Employment Directive. It includes e-Accessibility information about accommodation of people with disability at work. [xxxiii] The Finnish Act on Electronic Services and Communication in the Public Sector (13/2003) states that agencies should seek to use equipment and software that is compatible with assistive technology tools[xxxiv]
2. Standard	Evidence of web accessibility standards not found
3. Monitoring and compliance	There is no detailed information available in the public domain about the enforcement strategies used by the Finnish government on Web accessibility. It is important to highlight some of the initiatives taken by the government in relation to e-Accessibility. This includes 'Citizen Activity in the Information Society' (2007-2010) promoting accessible communication devices for the learning disabled.[xxxv]
4. Other incentives to comply	http://suvi.viittomat.net/ website provides sign language services for everyday communication for people with special needs.

[xxxiii] http://www.finlex.fi/en/laki/kaannokset/2004/en20040021.pdf
[xxxiv] http://www.finlex.fi/pdf/saadkaan/E0030013.PDF
http://www.eaccessibility-progress.eu/country-profiles/finland/websites/
[xxxv] http://www.epractice.eu/en/document/345825

2.6.10. France

1. ICT Accessibility Criteria (ICTAC)	ICTAC **non-specifically referred to** in public procurement guidelines[xxxvi] ICTAC **partially** defined in web accessibility standard (RGAA) and given legal affect through equal opportunity law (Article 47 of Law No. 2005-102) and related decree (Decree No. 2009-546)[xxxvii]
2. Standard	RGAA based on WCAG 2.0[xxxviii]
3. Monitoring and compliance	A deadline for 2012 has been set for public websites to conform to RGAA. A dedicated web accessibility organisation PGRFA is given authority to advise and monitor progress[xxxix] Authorities that fail to meet this deadline after 2- or 3- year period will be publically listed (EU, 2011f, p. 15)
4. Comments	Ministry of Finance has established a group to look at giving e-Accessibility greater legal effect in public procurement (EU, 2011f, p. 14)

[xxxvi] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010, p. 59)
[xxxvii] http://www.references.modernisation.gouv.fr/rgaa-accessibilite
[xxxviii] http://www.references.modernisation.gouv.fr/sites/default/files/RGAA_040310.pdf
[xxxix] http://www.modernisation.gouv.fr/piliers/optimiser/les-referentiels-un-cadre-structurant-pour-ladministration-electronique/objectif-accessibilite-des-services-en-ligne-pour-2012/index.html

2.6.11. Germany

1. ICT Accessibility Criteria (ICTAC)	ICTAC **non-specifically referred to** in public procurement guidelines[xl] ICTAC **partially defined** in web accessibility standards (BITV2.0 - Barrierefreie-Informationstechnik-Verordnung) and is given legal affect by Disability Discrimination Act 1992 (Ergänzung des Behindertengleichstellungsgesetzes -BGG). Applies to federal government web sites[xli]
2. Standard	BITV2.0 based on WCAG2.0 (see Comments)
3. Monitoring and compliance	BITV seal of approval for web sites that achieve more than 90 points are classed as 'accessible', (more than 95 points are classed as 'very accessible'). A list of accessible website is published[xlii] Public websites need to be accessible by 2012 and inclusion of German Sign Language by 2014 Hotline service exists for the reporting of 'digital barriers'[xliii] People are able to seek legal redress through disability discrimination legislation for poor accessibility in federal government websites[xliv]
4. Comments	Some claim that BITV2.0 has strayed too far from WCAG2.0. BITV2.0 builds on BITV1.0 and was developed through consultation with representatives from people with disabilities under the authority of the Federal Ministry for Employment and Social Affairs[xlv]

[xl] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010, p. 81)
[xli] http://www.bitvtest.eu/bitv_test/intro/overview.html
http://www.einfach-fuer-alle.de/artikel/bitv_english/
[xlii] http://www.bitvtest.eu/bitv_test/intro/overview.html
[xliii] http://www.meldestelle.di-ji.de/
[xliv] http://www.g3ict.org/resource_center/country_profiles/G3ict_White_Paper_-_Accessibility_Policy_Making/Germany
[xlv] http://www.einfach-fuer-alle.de/artikel/bitv_english/

2.6.12. Greece

1. ICT Accessibility Criteria (ICTAC)	ICTAC **non-specifically referred to** in public procurement guidelines[xlvi] ICTAC **partially defined** (web accessibility) in 'Certification Framework for Public Administration Sites and Portals' under authority from Greek public administration regulations[xlvii]
2. Standard	WCAG 1.0[xlviii]
3. Monitoring and compliance	Individual agencies are responsible for monitoring website site usage but there appear no specific recommendations for accessibility tests for people with disabilities. Agencies are encouraged to have online feedback mechanisms for people to comment but these are general and not specific to people with disabilities[xlix]
4. Comments	

[xlvi] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010, p. 87)
[xlvii] http://www.e-gif.gov.gr/portal/page/portal/egif/files/basicFiles - Certification Framework for Public Administration Sites and Portals' pp. 55-57
[xlviii] Ibid
[xlix] http://www.e-gif.gov.gr/portal/page/portal/egif/files/basicFiles - Certification Framework for Public Administration Sites and Portals' pp. 71-76

2.6.13. Hungary

1. ICT Accessibility Criteria (ICTAC)	ICTAC **non-specifically referred to** in public procurement guidelines[l] ICTAC **broadly defined** in Equal Opportunity legislation (EU, 2011f, p. 18) Standards for government intranets described in KIETB 19 encourages use of WCAG (ETSI, 2009, p. 75)[li]
2. Standard	Use of WCAG2.0 is encouraged
3. Monitoring and compliance	Website compliant with KIETB 19 are given a seal of approval (ETSI, 2009, p. 75) Legal redress exists for cases of discrimination through poor accessibility but the fragmented nature of equal opportunity provisions works against developing compliance (EU, 2011f, p. 19)
4. Comments	Public tender for public websites include accessibility criteria (EU, 2011f, p. 18)

[l] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010, p. 91)
[li] http://www.epractice.eu/en/news/283034

2.6.14. Iceland

1. ICT Accessibility Criteria (ICTAC)	a. ICTAC **acknowledged** in public procurement guidelines[lii] b. Web accessibility guidelines specified in e-Government regulations given legal effect in Public Administration Act(EU, 2011b, p. 12)
2. Standard	WCAG 2.0 a specified in Vefhandbókin[liii]
3. Monitoring and compliance	Annual review of accessibility policy W3C logo appears on all WCAG compliant web pages[liv]
4. Other incentives to comply	

[lii] As per EU Directive 2004/18/EC on public procurement (ETSI, 2009, p. 149; EU, 2011b, p. 19)
[liii] http://www.ut.is/vefhandbok
[liv] The Central Government Website - Accessibility Policy http://www.government.is/accessibility-policy/

2.6.15. Ireland[lv]

1. ICT Accessibility Criteria (ICTAC)	ICTAC **non-specifically referred to** in public procurement guidelines[lvi] ICTAC **broadly defined** in codes of practice supporting Disability Act, 2005 (NDA, 2006) ICTAC **partially defined (web accessibility)** in codes of practice supporting Disability Act, 2005 (NDA, 2006)
2. Standard	WCAG1.0 and other technologies defined in the Disability Discrimination Act (see Comments) (NDA, 2006)
3. Monitoring and compliance	Self-reporting of public agencies to independent authority (NDA) with no obvious sanctions for non-compliance found (NDA, 2009, 2011)
4. Comments	World-leading research capabilities into universal design and online procurement toolkit Other ITCAC defined as "large print, Braille, electronic communications that can be accessed with adaptive technology and audio tape" (NDA, 2006)

[lv] See also in-depth cases in Chapter 3
[lvi] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010)

2.6.16. Israel

1. ICT Accessibility Criteria (ICTAC)	No evidence found of ICTAC in public procurement law 1998 Law of Equal Rights for Persons with Disabilities provides avenue for affirmative action to enable equal access but evidence of ICTAC not found[lvii] Active NGO sector has promulgated web accessibility standards in public and private websites[lviii]
2. Standard	WCAG 2.0 is used[lix]
3. Monitoring and compliance	Evidence of external monitoring by nagish.org.il (NGO) of government websites and publication of results[lx]
4. Other incentives to comply	

[lvii] http://www.ideanet.org/content.cfm?id=5B5C76#telecommunications based on the 2003 IRDM report
[lviii] http://www.isoc.org.il/access_eng/fr_access_partners_eng.html
www.nagish.org.il
[lix] http://www.gov.il/FirstGov/BottomNav/MemshalZamin/Report/E-Gov-Report2011/Comparison/Accessibility
[lx] http://www.gov.il/FirstGov/BottomNav/MemshalZamin/Report/E-Gov-Report2011/Comparison/Accessibility

2.6.17.   Japan[lxi]

1. ICT Accessibility Criteria (ICTAC)	ICTAC **comprehensively** defined in PP law (Yamada, 2007a)
2. Standard	JISX8431 (Iizuka, 2005)
3. Monitoring and compliance	No evidence of independent scrutiny processes found. No published sanctions for non-compliance found.
4. Other incentives to comply	Reliance is placed on 'soft touch' approaches to encourage compliance with web accessibility criteria (Yamada, 2011b).

[lxi] See also in-depth cases in Chapter 3

2.6.18.   Republic of Korea

1. ICT Accessibility Criteria (ICTAC)	a. ICTAC criteria **not** found in PP law b. ICTAC **comprehensively** defined (IT&T) in KTTA national standards that are not legally enforceable (Joonho Hyun, 2009) c. ICTAC **partially** defined (WCAG 1.0 and KWAG1.0) which are mandatory for public websites under disability discrimination law (Joonho Hyun, Moon, & Hong, 2008; NIA, 2010)
2. Standard	Korea Telecommunication Technology Association (KTTA) WCAG 1.0 and KWCAG 1.0
3. Monitoring and compliance	Under the National Information Act 2009 an annual survey of 1000 public websites for compliance with KWCAG 1.0 by the Ministry of Public Administration and Security. The mandatory use of accessibility standards contains an obligation to explain non-compliance under the 'comply or explain principle' [lxii] High levels of web accessibility compliance reported (Joonho Hyun & Min, 2011)
4. Comments	Digital Divide Act (2000) stipulated a number of processes for engagement. Digital Divide Act 2000 encourages accessibility initiatives (Joonho Hyun, 2009). Information Accessibility Forum (IABF)' facilitates discussion between academia, businesses, organisations for citizens with disabilities, and research institutions (NIA, 2010) Disability Discrimination Act 2007 established principle of Information Access Rights (NIA, 2010) Poor compliance with KCAG 1.0 is linked to near universal use of Microsoft in government agencies (Park, 2012)

[lxii] http://www.mediaaccess.org.au/node/451

2.6.19.   Luxembourg

1. ICT Accessibility Criteria (ICTAC)	ICTAC **acknowledged** in public procurement guidelines[lxiii] e-Inclusion strategy is defined in the e-Governance Master Plan (Plan directeur de la gouvernance électronique) adopted by the Government in May 2010 (EU, 2010b, p. 6) Equal Treatment Act (2006) provides the legal framework for web accessibility (EU, 2010b, p. 7)
2. Standard	Web accessibility Guidelines ReNo: Référentiel de normalisation pour les sites web du Gouvernement[lxiv]
3. Monitoring and compliance	Future monitoring regime foreshadowed (Barrere, 2010)
4. Other incentives to comply	

[lxiii] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010, p. 127)
[lxiv] http://www.epractice.eu/files/media/media2371.pdf

2.6.20.   Mexico

The search for English language sources about ICTAC in Mexico yielded insufficient information to include Mexico in this benchmarking exercise.

2.6.21.   Netherlands

1. ICT Accessibility Criteria (ICTAC)	ICTAC **non-specifically referred to** in public procurement guidelines[lxv] ICTAC **partially** described (web accessibility) by ministerial decision (Webrichtlijnen or web guidelines for government websites)[lxvi]
2. Standard	WCAG 1.0[lxvii]
3. Monitoring and compliance	Conformance assessment framework and documentation was developed in cooperation with disability representative organisation drempelvrij, which authorises the awarding of a quality mark. Inspecting organisations are independent and registered with the Dutch Accreditation Council [lxviii] Other notable organisations are ICTU and the Stichting Accessibility (Accessibility Foundation) is also responsible for the development of web guidelines for people with disabilities[lxix] Government is obliged to comply with the Web Guidelines. Not by law, but on the basis of agreements. The business community has no such obligation[lxx]
4. Comments	Comprehensive set of educational information and guidance available[lxxi]

[lxv] As per EU Directive 2004/18/EC on public procurement
[lxvi] http://www.webrichtlijnen.nl/english/what-and-why/regulatory/decision
[lxvii] Ibid
[lxviii] http://www.drempelvrij.nl/waarmerk-behalen/documenten-voor-inspectie
http://www.webrichtlijnen.nl/english/testing/official-checking
[lxix] https://www.ictu.nl/english/
http://www.accessibility.nl/english
[lxx] http://www.webrichtlijnen.nl/english/what-and-why/regulatory
[lxxi] Ibid

2.6.22. New Zealand

1. ICT Accessibility Criteria (ICTAC)	No reference found public procurement regulations to ICTAC (waiting on response to confirm) ICTAC **partially** defined in New Zealand Government Web Standards and given broad legal affect by the Human Rights Act 1993[lxxii]
2. Standard	New Zealand Government Web Standards based on WCAG 2.0[lxxiii]
3. Monitoring and compliance	An agency must conduct standards assessments of all the websites for which it has responsibility at least once a year, the results of which must be submitted to Government Information Services (GIS) at the Department of Internal Affairs[lxxiv] Compliance checks are not systematically carried out and sanctions for non-compliance not found[lxxv]
4. Comments	Comprehensive set of guidance material available (Government Information Service, 2011)[lxxvi]

[lxxii] http://ict.govt.nz/guidance-and-resources/standards-compliance
http://www.evengrounds.com/blog/web-accessibility-in-new-zealand
[lxxiii] Ibid
[lxxiv] http://webstandards.govt.nz/standards/meeting-the-standards/
[lxxv] Personal communication from GIS
[lxxvi] http://webstandards.govt.nz/guides/

2.6.23. Norway

1. ICT Accessibility Criteria (ICTAC)	ICTAC is broadly referred to in public procurement law as 'universal design'[lxxvii] ICTAC is broadly defined in Section 11 of the Anti-Discrimination and Accessibility Act in terms of universal design. ICTAC is partially defined for web accessibility in the e-Government management framework. There is an official government policy that public websites be compliant with W3C WAI Standards[lxxviii]
2. Standard	WCAG1.0 The term universal design carries with it specific requirements in Norway
3. Monitoring and compliance	Annual quality assessment of online services in the public sector is carried out by Agency for Public Management and eGovernment (Direktoratet for forvaltning og IKT). Results are published on the web[lxxix]
4. Comments	Anti-Discrimination and Accessibility Act includes information about circumstances under which coercive fines may be imposed in relation to section 11 of the Act

[lxxvii] See the Standard Norge publication 'Universal design as a legal term – how problematic is it?' at http://www.standard.no/no/fagomrader/Universell--utforming/Fagartikler/Universal-design-as-a-legal-term--how-problematic-is-it-/
[lxxviii] http://www.egovmon.no/en/
[lxxix] http://kvalitet.difi.no/resultat/

2.6.24. Poland

1. ICT Accessibility Criteria (ICTAC)	ICTAC **acknowledged** in public procurement guidelines[lxxx] Polish Act on Access to Public Information indicates basic rights for information access but does not spell out how access is to be achieved (EU, 2010c, p. 10)
2. Standard	
3. Monitoring and compliance	No evidence found of a monitoring regime[lxxxi]
4. Other incentives to comply	

[lxxx] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010, p. 151)
lxxxi Legal aspects of Web accessibility http://www.utilitia.com/legal-aspects-of-web-accessibility/

2.6.25. Portugal

1. ICT Accessibility Criteria (ICTAC)	ICTAC **acknowledged** in public procurement guidelines (ETSI, 2009, p. 154) **Web accessibility** criteria defined in Technical Specifications Annex for ICTs Public Tenders in relation to websites.[lxxxii] ICTAC **broadly** defined in disability discrimination in employment legislation (law 38/2004) (ETSI, 2009, p. 154) ICTAC **partially** defined by ministerial resolution 155/2007 (web accessibility)[lxxxiii]
2. Standard	WCAG1.0[lxxxiv]
3. Monitoring and compliance	Ministerial resolution 155/2007 authorises follow up action to check compliance of public websites with accessibility guidelines[lxxxv] UMIC (Knowledge Society Agency) has coordinated development of a free website evaluator compliant with WCAG2.0[lxxxvi] Ministerial resolution 110/2003 authorises establishment of a complaint mechanism to enable citizens to report websites with poor accessibility[lxxxvii]
4. Comments	Portugal played an early role in promoting the issues of web accessibility by making it a legal requirement in 1999 by ministerial resolution 97/99 (ETSI, 2009, p. 177)

[lxxxii] http://www.eaccessibility-progress.eu/country-profiles/portugal/public-procurement/
[lxxxiii] http://www.umic.pt/images/stories/publicacoes200710/RCM%20155%202007.pdf
[lxxxiv] http://www.umic.pt/index.php?option=com_content&task=view&id=10&Itemid=37
[lxxxv] http://www.umic.pt/images/stories/publicacoes200710/RCM%20155%202007.pdf
[lxxxvi] http://www.umic.pt/index.php?option=com_content&task=view&id=10&Itemid=37
[lxxxvii] http://www.umic.pt/images/stories/publicacoes/RCM%20110-03.pdf

2.6.26. Spain

1. ICT Accessibility Criteria (ICTAC)	ICTAC **broadly defined** in public procurement law[lxxxviii]
2. Standard	UNE 139803:2004 (Web content) [i.159] (ETSI, 2009, p. 39) UNE 139801:2003 (Hardware) [i.157] UNE 139802:2003 (Software) [i.158]
3. Monitoring and compliance	Sanctions for breaches to accessibility standards exist in equal opportunity law (article 8 Law 51/2003). An arbitration process exists for people with disabilities to resolve issues of non-compliance where the burden of proof rests with the defendants where maximum penalties for non-compliance are 30,000 Euros (EU, 2011f, pp. 25-26)
4. Comments	The absence of detailed technical specifications was cited as a principle challenge in achieving an acceptable level of accessibility in ICTs (Ministerio de Trabajo y Asuntos Sociales, 2004, pp. 63-66)

[lxxxviii] As per EU Directive 2004/18/EC on public procurement (Bianchi & Guidi, 2010, p. 197) Spanish Public Procurement law (Article 101 in Law 30/2007) makes specific reference to hardware, software and web accessibility universal design principles that are supported by Spanish law on Equality of Opportunities, Non Discrimination and Universal Accessibility for People with Disabilities (Law 51/2003 (ETSI, 2009, p. 39 & 157)

2.6.27. Slovakia

1. ICT Accessibility Criteria (ICTAC)	ICTAC **acknowledged in** public procurement law[lxxxix] ICTAC Web accessibility obligation imposed on central and local governments in the Public Administration Information Systems Act 275/2006[xc]
2. Standard	WAI guidelines[xci]
3. Monitoring and compliance	Annual monitoring of compliance indicated with publication of results[xcii].
4. Other incentives to comply	

[lxxxix] MeAC - Measuring Progress in eAccessibility in Europe. http://www.eaccessibility-progress.eu/country-profiles/slovakia/public-procurement/
[xc] eInclusion Factsheet – Slovakia (2010) http://www.epractice.eu/en/document/344403
[xci] ibid.
[xcii] ibid.

2.6.28. Slovenia

1. ICT Accessibility Criteria (ICTAC)	ICTAC **acknowledged** in public procurement law[xciii] Web accessibility standards are recommended for public websites[xciv] Legislation affirming information access for people with disabilities can be found in Article 13 of the 'Decree on the provision of public information' and Article 120 of the 'Electronic Communications Act'
2. Standard	WCAG 2.0[xcv]
3. Monitoring and compliance	The Ministry of Public Administration (Ministrstvo za javno upravo) is responsible for monitoring[xcvi]
4. Other incentives to comply	

[xciii] MeAC - Measuring Progress in eAccessibility in Europe http://www.eaccessibility-progress.eu/country-profiles/slovenia/public-procurement/

[xciv] eInclusion Factsheet - Slovenia (2010) http://www.epractice.eu/en/document/343536

[xcv] ibid.

[xcvi] ibid.

2.6.29. Sweden

1. ICT Accessibility Criteria (ICTAC)	The ICTAC is **broadly defined** for the ICT products and services. The Swedish Government Bill 1999/2000: 79 states that the IT products and services should be accessible to and usable by people with disability. Swedish Government Bill 2004/05: 175 states that IT must be accessible to everyone. The Central Purchasing Body, part of the Legal, Financial and Administrative Service Agency (sw. Kammarkollegiet) is responsible for negotiating *framework agreements* to be used by public authorities. eAccessibility guidelines are incorporated in framework agreements in the field of ICT (ETSI, 2009, pp. 192-193). The Swedish Agency for Public Management (Statskontoret) has developed guidelines on usability and e-Accessibility in public procurement of ICT. Swedish law such as the Law on Work Environment and Law on Rehabilitation state that the employer "shall" make sure they design the workplace suitable for persons with disabilities and also acquire ICT systems which satisfy accessibility requirements. In 2005, the former Swedish Administrative Development Agency Verva developed the national guidelines for public sector websites. These guidelines were heavily drawn from WCAG (von Axelson, 2010)
2. Standard	WCAG 2.0
3. Monitoring and compliance	Prime responsibility of monitoring compliance with discrimination laws falls on the Equality Ombudsman[xcvii]. In the past the Ombudsman has issued annual questionnaires to monitor accessibility. Handisam (Swedish Agency for Disability Policy Coordination) is the lead agency responsible for developing a monitoring regime[xcviii] Sanctions for non-compliance need to be followed through the courts[xcix]
4. Comments	

[xcvii] http://www.do.se/en/About-the-Equality-Ombudsman-/

[xcviii] http://www.handisam.se/Handisam/   As a part of Swedish disability policy, Handisam has two paramount tasks: co-ordination and acceleration.

[xcix] http://www.do.se/en/About-the-Equality-Ombudsman-/

2.6.30. Switzerland

1. ICT Accessibility Criteria (ICTAC)	ICTAC **non-specifically referred to** in public procurement guidelines[c] ICTAC **partially defined** (web accessibility standards) defined in administrative regulation (PO28) that gain their authority from the Disability Discrimination Act 2004 (EPDS) and the Federal Constitution Applies to all for German federal web sites (Access for All, 2011, pp. 9-14)
2. Standard	P028 version 2.0 based on WCAG2.0[ci]
3. Monitoring and compliance	Independent monitoring of websites by 'Access for All' (Access for All, 2011, pp. 9-14) Complaints can be made to federal authorities for non-compliant websites (Access for All, 2011, p. 12) Legal sanctions exist for poor website accessibility for public bodies and to a lesser extent private companies[cii]
4. Comments	

[c] As per EU Directive 2004/18/EC on public procurement
[ci] http://www.access-for-all.ch/en/guidelines/law-switzerland.html
[cii] http://www.access-for-all.ch/en/guidelines/law-switzerland.html

2.6.31. Turkey

1. ICT Accessibility Criteria (ICTAC)	EU directives on ICTAC in public procurement as yet not implemented Broad outline for the implementation of web accessibility contained in Information and Communication Technologies Authority (ICTA) 2010 'Work Plan', which sets out specific actions for the disabled. These include: - Provide accessible and sufficient information - Provide equal access conditions to electronic communication services for disabled users. - Increase awareness of ICT-related fields for the private sector. (EU, 2010d, p. 15)
2. Standard	None found
3. Monitoring and compliance	No evidence found
4. Other incentives to comply	

2.6.32.   United Kingdom[ciii]

ICT Accessibility Criteria (ICTAC)	ICTAC **non-specifically referred to** in public procurement guidelines[civ] ICTAC **broadly** described in Equality Act 2010 (EHRC, 2011) ICTAC **partially** (web accessibility) defined in British Standards (BS8878: 2010) as voluntary guidelines[cv]
Standard	BS8878:2010 – Web accessibility[cvi]
Monitoring and compliance	For web accessibility of public websites, monitoring is carried out by the Equality and Human Rights Commission which as a range of legal powers to enforce compliance (EHRC, 2011) Much of the monitoring and compliance regime for accessibility relies on individuals and groups to seeking redress through the courts[cvii]
Comments	eAccessibility forum instituted by the Department of Culture Media and Sport brings together business, public organisations and representative groups from the disability community to participate in the eAccessibility Action Plan[cviii]

[ciii] See also in-depth cases in Chapter 3
[civ] As per EU Directive 2004/18/EC on public procurement and responses from Cabinet Office as part of this research
[cv] http://shop.bsigroup.com/en/ProductDetail/?pid=000000000030180388
[cvi] Ibid.
[cvii] http://www.equalityhumanrights.com/advice-and-guidance/public-sector-equality-duty/monitoring-and-enforcement/ http://www.rnib.org.uk/professionals/webaccessibility/lawsandstandards/Pages/uk_law.aspx
[cviii] http://www.discuss.culture.gov.uk/eaccessibility

2.6.33.   United States[cix]

ICT Accessibility Criteria (ICTAC)	ICTAC **comprehensively** defined in PP law[cx]
Standard	Section 508, Rehabilitation Act[cxi]
Scrutiny and sanction	Buy-accessible wizard guides procurers and vendors through procedures that enable compliance to be monitored and recorded[cxii] Failure of federal agencies to comply with Section 508 represent grounds on which a complaint or civil suit may be lodged by individuals. However, scrutiny of accessibility implementation is weak by relying on individuals to notice and raise problems
Comments	

[cix] See also in-depth cases in Chapter 3
[cx] http://www.access-board.gov
[cxi] http://section508.gov
[cxii] https://app.buyaccessible.gov

2. In-depth Case Studies

3.1.   Introduction

The in-depth case studies have been chosen as exemplars to present a variety of situations pertaining to the implementation of accessibility criteria within comparable countries of the OECD. Justification for the choice of these six case studies is briefly explained as follows.

USA – This lead case provides an example of a comprehensive set of accessibility standards applied to ICTs in public procurement law coupled with sanctions for non-compliance. The USA has led the way in the use of accessibility standards in public procurement. It is still held in high regard by commentators.

Japan – The case of Japan also reveals the use of a comprehensive set of accessibility standards applied to ICTs in public procurement law even though its compliance mechanisms are weak. This case represents a potential way forward for imprinting disability standards within global standards.

European Union Mandate 376 – This mandate from the European Union represents the latest activity in comprehensive accessibility standards development that is ultimately destined for inclusion in public procurement law throughout the EU.

Canada – The case of Canada is most similar to Australia because it has only partially adopted accessibility criteria in the form of web accessibility guidelines and this has occurred outside of public procurement laws. The availability of a sophisticated toolkit on a voluntary basis provides a window on the efficacy of strategies that encourage voluntary compliance. The province of Ontario has enacted a much stricter set of accessibility criteria that make the purchase of accessible ICTs by the provincial government and enterprises mandatory.

Ireland – Ireland provides an interesting insight into a situation where the emphasis is on encouragement in the use of accessibility criteria through disability discrimination law outside of procurement law. A number of world-class Irish institutions provide advice to local organisations but full compliance by public agencies with web accessibility criteria has proved difficult to achieve. The implementation of comprehensive ICT accessibility criteria, while often acknowledged, for example, in the availability of online toolkits, lacks sufficient legal force to have had a noticeable impact on procurement practices.

United Kingdom – The United Kingdom has facilitated a broad range of involvement by stakeholders notably a business coalition that has linked the concept of accessibility to business productivity.

3.2.   United States of America

Section 508 is the name given to the set of compulsory accessibility standards based on the 1998 amendments to the Rehabilitation Act 1973. Section 508 requires federal government agencies, when purchasing ICTs for use by their employees or the general public, to address a range of accessibility criteria prior to issuing tenders or purchase orders. The scope and depth of these compulsory conditions are the reason Section 508 is held up by many as a reference for other countries to use when accessing progress in their standards setting for accessible ICTs.

The impact of the Section 508 initiative is not straightforward to assess. For example, while 7% of federal government employees are people who nominate themselves as having a disability, this figure has remained constant since the early 1980s.[17] Hence, it is not possible to see a correlation between increased employment in federal agencies and the introduction of Section 508 standards.

Rather than a 'silver bullet', Section 508 accessibility standards have played an important part in a suite of measures designed to reduce the barriers for people with disabilities in a range of areas. Even equipment manufacturers have come to appreciate the certainty that the standards have provided as they seek to innovate their products to better address their legal obligations to people with disabilities (COAT, 2012). Such has been the impact of the Rehabilitation Act along with other areas of disability legislation some have compared these changes to the US Civil Rights Acts of 1965 (Fotopoulos, 2006). However, active enforcement has still not been addressed comprehensively. With the advent of the revised Section 508 standards and related processes, this is an area that may change.

3.2.1.   Disability discrimination policy context

The United States signed the UNCRPD on 30 July 2009 but is yet to ratify it. Despite the relatively late arrival of the USA as a signatory to the UNCRPD it comes to the table with legislation enacted over the past four decades to reduce barriers for people with disabilities. This includes:

- the Rehabilitation Act 1973
- Technology Related Assistance for Individuals with Disabilities Act of 1988
- Americans With Disabilities Acts of 1990 and 2008
- Individuals with Disabilities Education Acts of 1990, 1997, and 2004
- Section 255 of the Telecommunications Act of 1996
- 21st Century Communications and Video Accessibility Act of 2010

The relevant legislation from which Section 508 is drawn is the Rehabilitation Act of 1973. It was not until 1998 that amendments to Section 508 saw the creation of a set of enforceable accessibility standards eventually embedded into federal procurement regulations in 2001 (Fotopolus, 2006, p. 98). The rationale for the amendments was to provide public servants who had disabilities with access to ICT in the work place similar to that available to their able-bodied peers.

In the area of telecommunications, Section 255 of the 1996 Telecommunications Act seeks to make available accessible telecommunications equipment to people with disabilities in the general population. The motivation for this initiative is best understood as part of the universal service provisions of telecommunications, which seeks to ensure that all citizens have equitable access to the functionality of modern telecommunications equipment. The connection that Section 255 of the Telecommunications Act shares with Section 508 of the Rehabilitation Act lies in the standards setting body, called the United States (U.S.) Access Board, which determines relevant standards for each area of legislation.

The U.S. Access Board is an independent Federal Agency that is devoted to accessibility for people with disability (U.S. Access Board, 2012). As well as possessing expertise in accessibility requirements for ICTs, it is responsible for setting standards in the built environment and transportation. In addition to writing and enforcing standards for accessible design, the U.S. Access Board also provides training to promote greater awareness of the design needs of people with disabilities. It has limited investigation and enforcement powers, however. For Section 255, the enforcing agency is the

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[17] See Federal Jobs Network webpage at http://federaljobs.net/disabled.htm Retrieved 22 May 2012

Federal Communications Commission (FCC), and for Section 508 several other agencies share oversight and enforcement authority. A Section 508 expert contacted as part of this research suggested that this separation of technical expertise and focus from enforcement has led to inefficiencies in implementation.

3.2.2.   Public procurement and ICT accessibility criteria

The relevant legislation that governs public procurement in the federal government is called the Federal Acquisition Regulations (FAR). The FAR is issued pursuant to the Office of Federal Procurement Policy (OFPP) Act of 1974. The Office of Management and Budget (2012) is responsible for developing and maintaining federal acquisition regulations. The United States became a party to the World Trade Organization's General Procurement Agreement (WTO-GPA) on 1 January 1996.

An amendment to FAR in 2001 gave legal effect to Section 508 of the Rehabilitation Act in public procurement. Notice of amendments to FAR to enable implementation of Section 508 accessibility provisions was made on 25 April 2001 and can be found in the Federal Register (66 Fed. Reg. 20894).[18] It came into force on 25 June 2001.

The regulatory provisions covering the procurement of accessible hardware and software products for federal government agencies are noted for both their detail and the mandatory nature of these standards. Section 508 requires that electronic and information technology (E&IT) purchased by federal government agencies complies with standards to ensure that the product is just as accessible to persons with disabilities as it is to persons without disabilities. E&IT is used under Section 508 and is defined by regulation to include:

> *Information technology and any equipment or interconnected system or subsystem of equipment that is used in the creation, conversion, or duplication of data of information*

Examples here include telecommunications products such as telephones, information kiosks, World Wide Web, multimedia, computer operating systems, word processing software, web pages, voicemail systems, computer monitors, printers and laptop computers.

The Section 508 requirement is triggered whenever a federal agency develops, procures, maintains and uses E&IT. However, only procurement triggers any specific oversight and enforcement.

The two groups of persons with disabilities covered in Section 508 are federal employees and members of the public seeking information or services from federal government agencies. Section 508 does not apply to the private sector or to state or local jurisdictions. However, to receive federal funds, organisations that receive funds under the Technology Related Assistance for Individuals with Disabilities Act of 1988, a small federal program that provides support for accessible technology and assistive technology in the states, are required to comply with Section 508 (Fotopolus, 2006).

As a large technology consumer in the United States, the Federal Government's introduction of Section 508 accessibility requirements motivates industry to design and manufacture more accessible technology products. A representative from software developer Adobe is quoted as saying

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[18] See Section 508.gov web page at http://www.section508.gov/index.cfm?fuseAction=FAR Retrieved 5 June 2012

When government says you need to build technology a certain way, for vendors like ourselves that's a very compelling maxim. We need to build products that can be sold to the government. It's not very practical for us to build multiple versions of our products (Marsan, 2001 cited in D'Aubin, 2007)

Section 508 requires that agencies must procure accessible electronic and information technology regardless of whether they have employees with disabilities. Therefore, once equipment and software is developed and procured in compliance with Section 508, there is no need for 'retrofitting' should a department employ a person with disabilities. The same is true for the general public; an agency's website must be accessible by default. However, the regulation does not require installation of software or hardware that falls into the category of purpose-built assistive technology at the workstation of a federal employee who is not an individual with a disability.

In recognition of the significant changes that Section 508 standards impose on federal agencies and their suppliers some partial exemptions are allowed. A partial exemption can be claimed if products in the commercial market place do not fully comply with Section 508 requirements. However, agencies cannot claim a full exemption on the basis of products that fail to meet some of the Section 508 requirements; the intention is clear in that products that best meet selection criteria should be considered for purchase.

A federal agency may be granted an exemption if they experience an undue burden. In this context undue burden is defined as meaning "significant difficulty or expense" (Section 1194.4).[19] There is still a requirement for agencies that are excused from compliance due to undue burden to provide people with disabilities "alternative means of access that allows the individual to use the information and data" (1194.2).

There are three areas in which general exemptions to the requirements of Section 508 are permitted (Section 1194.3).

1. Where the purchase of equipment and software is for functions involving intelligence and military activities related to national security. This exemption does not apply to administrative and business systems that are used for routine applications such as payroll, finance, logistics, and personnel management.
2. Equipment and software acquired by a contractor incidental to the contract
3. The 'Back Office' exception, which refers to, the local interfaces on equipment located in spaces frequented only by service personnel. This would exempt the switches on a server in an equipment closet, but not the administrative software interface if it could be accessed remotely from a workstation.

The specific technical requirements of Section 508 are grouped into six sections corresponding to six product categories

- Software applications and operating systems
- Web-based information and applications
- Telecommunications products
- Video and multimedia products
- Self-contained, closed products
- Desktop and portable computers

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[19] For the full text of Section 508 standards proceed to http://www.access-board.gov/sec508/standards.htm Retrieved 21 October 2011

Web accessibility criteria are intrinsic to Section 508 guidelines. Readers will discover that this stands in contrast to other countries that have placed most of their attention on web accessibility criteria.

On first impression, the technical specifications that go to make up the Section 508 accessibility standards are complex, perhaps bordering on the arcane. The job of summarising these in a user-friendly manner for industry players has proven to be challenging as revealed in the online wizard.[20] The Buy Accessible Wizard is a central information repository that facilitates both vendors and purchaser compliance with Section 508 accessibility standards. One of its functions is to generate a request for specific accessibility information from a vendor based on what product the buyer is interested in. This allows for more streamlined implementation that enables monitoring of purchases for review and research.

Incentives to Compliance

The legislated requirements of Section 508 act as an incentive for federal agencies to comply with accessibility standards. Agencies that fail to adhere to the provisions may have a complaint lodged against them by an individual, which, if determined to be correct, could lead to penalties being imposed. It is also possible for such individuals to file a civil action against the agency. Importantly, vendors that do not address accessibility criteria will not be considered in tender processes.[21] Another route to enforcement has been the scrutiny that vendors have applied to their competitor's products, particularly on discovering their rival's success in a tender to ensure that their rival's claims of accessibility can be sustained.

Given the complexity of the standards, the Buy Accessible Wizard can be seen as an incentive that encourages compliance with Section 508 provisions. In addition, the availability of information for training also contributes to the capacity of individuals and organisations to comply. In fact, twenty US states have been led to adopt Section 508 standards in their purchasing procedures for ICTs (Hill, 2012, p. 6). Educational institutions have also adopted Section 508 standards in whole or in part.

While considered the strongest of compliance regimes out of all the cases studied in this research, some commentators have noted problems in the way Section 508 standards have been implemented. Turner (2012), in his presentation to the US Senate, claims that products with poor accessibility features are still being purchased by federal and state jurisdictions. He suggests that more needs to be done in addition to Section 508 to drive better availability of accessible ICTs.

Web accessibility compliance with Section 508 standards has also been lacking. For example, Jaeger's (2006) study of the accessibility of US e-government websites reveals large variances. He goes on to find that variations also exist in the ways accessibility is designed into websites and in the testing procedures that are used to demonstrate compliance. More recently, Olalere and Lazar (2011) have found that web accessibility is still of concern with an average of 2.27 accessibility guideline violations on each home page of the federal agencies that were studied. In listing their suggestions for improvement, education of end-users and web designers appears paramount. They suggest that people with disabilities should be included at the beginning of the design process. It is also noteworthy that they suggest greater self-reporting by agencies of their web design philosophy and testing regimes to promote a more informed discussion about what constitutes an accessible website.

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[20] The Buy Accessible Wizard can be viewed at http://www.buyaccessible.gov/ Retrieved 11 October 2011
[21] See Section 508.gov web page at http://www.section508.gov/index.cfm?fuseAction=FAR Retrieved 5 June 2012

Pressure is being placed on the private sector to make their websites more accessible through Section 504 of the Rehabilitation Act which covers organisations that are recipients of federal funds (Silverstein, 2012). In addition to this, federal civil rights statutes and implementing regulations require that all privileges offered to individuals without disabilities be offered to individuals with disabilities. This is currently the subject of greater emphasis where state and local jurisdictions and the private sector are being reminded of their obligations under the Americans with Disabilities Act (ADA) and the Rehabilitation Act.

At the time that the research for this report was conducted, the U.S. Department of Justice had undertaken a survey of federal agencies for their compliance with Section 508 and was expected to issue a report in the near future (Hill, 2012). During 2011, President Obama announced a strategic plan that would improve compliance with Section 508 (Hill, 2012).

Section 508 Refresh

The renewed focus on Section 508 in the USA should soon lead to the official release of a revised set of accessibility standards. In 2006, the realisation that Section 508 standards were being challenged by new technologies led to a review called the 'Section 508 Refresh'. The U.S. Access Board formed the Telecommunications and Electronic and Information Technology Advisory Committee (TEITAC) to undertake this task. 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.[22] TEITAC has also been considering new and converging technologies. These include:

- 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 has made is aimed at ensuring standards better address rapid technological changes. The Committee has moved from specific products 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).

Another example is the shift from 'telephone systems' to the concept of 'real-time voice conversation functionality'. From an access perspective, a computer program that provides real-time voice conversation capabilities (such as Skype) should be considered in the same way as a telephone, and should be equally accessible (Maguire, 2008). The challenge here will be to ensure that definitions of functionality developed in earlier and less complex forms of these technologies (e.g. the telephone) do not become overwhelmed by the need to address accessibility requirements of these numerous other features.

There is a realisation that greater international harmonisation of standards would promote greater availability of accessible ICTs. As the European Union, Canada and Japan also have public procurement initiatives for ICTs, advice has been sought by TEITAC from these sources.[23] Incorporation of the Web Content Accessibility Guidelines (WCAG 2.0) has also been slated for

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22 See http://www.access-board.gov/about/laws/telecomm.htm. Retrieved 15 August 2011

[23] The Australian Human Rights Commission represented the interests of Australians with disabilities.

inclusion. A Section 508 expert contacted as part of this research reported that the new version of Section 508 is expected to rely on WCAG 2.0 not only for web accessibility, but also for a source of extrapolated guidelines for all ICTs with an interface. That is, the WCAG 2.0 guidelines for web content will be applied to word processing documents, spreadsheet software and smartphone interfaces.

TEITAC and its sub-committees delivered its report to the U.S. Access Board in April 2008. Public comments have been received and a rulemaking process is under way before new rules can be issued.

There has been dissatisfaction with the length of time that the refresh process has taken. Commenting on the 11 January 2012 hearing of the U.S. Access Board, the Coalition of Organizations for Accessible Technology (COAT, 2012) expressed frustration that the length of time for the review had left many manufacturers struggling to ensure compliance as they sought to keep up with the rapid pace of innovation in their fields.

3.2.3.   Discussion

It should be obvious by now why the USA was positioned in the benchmarking table (Table 2.1) as a country that had a comprehensive and mandatory set of ICT accessibility standards at their disposal. The use of the Buy-Accessible Wizard for both procurers and vendors means that the process of purchasing ICTs can be scrutinised internally by government authorities. Publication of such results would assist in better assessment of the level of compliance the USA is achieving. Hence, the incentives to comply are strong where federal agencies, which have failed to adhere to Section 508 requirements, are left vulnerable to complaint or civil lawsuits from individuals.

Even though incentives to comply are strong, more is required to encourage transparent and better website development processes by federal agencies. These include:

- making sure that people with disabilities are involved from the beginning
- provision of an ongoing plan of management that monitors and identifies accessibility problems
- publication of these processes so that the public is aware of such processes and knows how to address issues of concern
- training for developers.

With the outcomes of the Section 508 Refresh expected to be approved by the US Government relatively soon, it appears that public procurement in the USA may well be entering into a new and exciting phase.

Debate about the relative benefits and costs that flow from the strict provisions of Section 508 are ongoing. The issue of costs revolves around whether it is preferable to install accessibility features during manufacturing or whether these features are best retrofitted. The contention is that accessibility can be more economically accommodated in the initial design rather than by including accessibility features at a later time.

Comments from industry suggest a more complex picture. Certainly, as stated by Hubby previously, the strict compliance regime of Section 508, combined with the buying power of the U.S. Federal Government, are compelling factors that manufacturers respond to. Without this mandatory requirement, however, it is unlikely that manufacturers would voluntarily move to incorporate accessibility features. This is because the demand for accessibility features are not known in advance

which creates significant risk for manufacturers (Maskery, 2007; Yamada, 2007b). Even though industry has been a reluctant supporter of Section 508 because of its cost implications, recent comments from US manufacturers suggest that they appreciate the greater certainty that Section 508 accessibility criteria provides (COAT, 2012). This appears to be the reason why they are frustrated with the slow progress of the Section 508 Refresh; the uncertainty that is created, particularly in view of the long lead times required in manufacturing and software development, is difficult for them to manage.

3.3. Japan

The case of Japan is also recognised because of its use of national standards in the delivery of accessible ICTs. In Japan, the use of national standards to universally define a comprehensive set of accessibility criteria is viewed as the most commercially efficient method to directly promote access for people with disabilities and for older people. As a consequence, the public procurement system, as a vehicle for the delivery of accessible ICTs, is regarded as being less significant than it is in the USA. This is partly related to the lack of public scrutiny of public procurement practices in Japan. The absence of a transparent mechanism for ensuring application of accessibility criteria in the procurement process leaves more to be desired.

In 2010, it was estimated that 3.66 million (2.9%) of the Japanese population had a disability (Yamane 2011). Actual numbers are reasoned to be higher than this because the criteria that define disability are considered to be quite limited. Relevant to the topic of accessibility is the increasing proportion of ageing Japanese. In 2010 it was estimated that over 29 million (22.7%) of the population were 65 years of age or older (Ministry of Internal Affairs and Communications, 2010). By 2013, it is anticipated that 25.2% of the Japanese population will be aged 65 or older. As a consequence, accessibility policy and related initiatives in Japan consider older people and people with disabilities together (Watanabe, 2008).

3.3.1. Disability discrimination policy context

Japan became a signatory to the UNCRPD on 28 September 2007 but is yet to ratify the Convention. The primary area of Japanese disability discrimination law that was discovered in this research is called 'Persons with Disabilities Fundamental Law'. This law was enacted in 1993 and amended in 2004 and in 2011. The Act is wide ranging in that it seeks to improve participation of people with disabilities in medical care, pensions, welfare, employment, and education (Weiss, 2010). Providing a broad framework for government action, the Act mandates that municipal governments both draw up and implement programs that support the independence and social participation of Japanese citizens with disabilities. Article 22 sets out a more specific requirement for ICTs where Government and every local public body must take necessary action to ensure people with disabilities do not suffer disadvantage in their use of information and communication equipment and software. The most recent changes to the law have been made in preparation of Japan's ratification of the UNCRPD. Ohta (2004) comments that no penalties are stipulated in the Act so "its legal effectiveness and binding force are quite weak".

A related area of law is called the 'Basic Law on the Formation of an Advanced Information and Telecommunications Network Society' which was enacted in 2000 (Yamada, 2007a).[24] This law provides the framework about which government agencies coordinate their efforts in pursuit of an advanced information and telecommunications network society. The use of ICTs is seen as an important element in addressing the needs of the ageing population and people with disabilities.

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[24] See http://www.kantei.go.jp/foreign/it/it_basiclaw/it_basiclaw.html. Retrieved 24 September 2011

Importantly, the law establishes within the Cabinet office a unit called the Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society (IT Strategic Headquarters), which is dedicated to overseeing this vision.

3.3.2.   Japanese public procurement and ICT accessibility criteria

Within Japan, tenders are advertised in a government gazette called 'Kanpo' while the Japanese External Trade Office (JETRO) hosts an online service that enables non-Japanese companies to gain access to the latest tender information. Work is under way to better consolidate information from government websites in a centralised location under the auspices of Kanpo (ADB/OECD, 2005). Beyond this, however, there is no central office for public procurement in Japan and each government agency is responsible for the execution of their own tenders.

The legislative instruments that oversee public procurement accessibility provisions of public procurement are found in Accounts Law (Law No. 35 of 1947), Cabinet Order concerning the Budget, Settlement of Account and Accounting (Imperial Ordinance No. 165 of 1947), and the Local Autonomy Law (Law No. 67 of 1947). Japan became a signatory to the WTO agreement on Government Procurement (GPA) in 2001.

Much of the recent work on public procurement reform in Japan has been undertaken to address the need for transparent government procurement processes as required under WTO protocols (ADB/OECD, 2005). While there have been moves to enable both national and international suppliers to gain the latest information about tendering opportunities, individual government departments still maintain responsibility for executing and assessing tenders themselves.

When government entities procure public equipment and services they are required by law to address accessibility criteria along with other standards available from the Japan Industrial Standard Committee (JISC). The introduction of ICT accessibility standards to public procurement of ICTs can be traced to an announcement in 1995, which stated "Items to be evaluated shall be established in conformity with international and national standards" (Yamada, 2007a, p. 11). The Industrial Standardization Act Article 67 states:

> *The State and local government shall respect the Japanese Industrial Standards when specifying the technical standards with regard to industry, when specifying the specifications relating to purchased mineral or industrial products and when specifying the fixed standards relating to matters listed in the items of Article 2 when otherwise performing administrative work." (Industrial Standardization Act - Act No. 185 of June 1, 1949).*[25]

The Japanese Industrial Standards Committee (JISC) standard JIS X 8341 provides guidelines to facilitate information accessibility for older persons and persons with disabilities when using information communication equipment, software and services (Iizuka, 2005)

Part 1 (JIS X 8341-1) provides common guidelines (released in May 2004, revised March 2011)
Part 2 (JIS X 8341-2) provides Information Processing Equipment guidelines (released in May 2004)
Part 3 (JIS X 8341-3) relates to Web Contents, (released in June 2004, revised August 2010)
Part 4 (JIS X 8341-4) on Telecommunications Equipment (released in October 2005)
Part 5 (JIS X 8341-5) on Office Equipment (released January 2006)

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[25] See http://www.asianlii.org/jp/legis/laws/isaan185oj11949411/. Retrieved 6 October 2011

Part 6 (JIS X 8341-6) on Software Accessibility (due for release 2012-2013)
Part 7 (JIS X 8431-7) on Accessibility Settings (August 2011)

As JIS X 8341 covers the design of accessible ICT products, all levels of Japanese government are therefore required by law to adhere to these standards when procuring ICT equipment and services.

This series of standards has been influential in the harmonisation of standards within the international standards bodies. IEC Guideline 71 from the International Electro-technical Commission (IEC) and Web Content Accessibility Guidelines (WCAG2.0) developed within by the W3C have drawn heavily on the JISC standards.[26]

Despite the impressive work of the JISC to develop accessibility standards, some who are familiar with the Japanese situation question the effectiveness of procurement laws in delivering accessible ICTs to government and the broader marketplace. Yamada (2011a) reports that, in practice, all that is required when procuring information systems is to include a sentence on accessibility. Elsewhere Yamada explains that the onus of responsibility is on suppliers to explain how their products or services meet accessibility standards. The mechanisms used to check for compliance with accessibility standards is then left up to individual departments; no uniform compliance guidelines are available and no sanctions are published for not adhering to accessibility standards (Yamada, 2007a, p. 12).

Responding to questions for this research, a spokesperson for JETRO indicated that a recent review of the efficacy of procurement law revealed that the JIS X 8341 standards were not sufficient to achieve the requirements of Article 22 of the Basic Act for Persons with Disabilities (which requires government and public bodies to take the necessary action so that persons with disabilities do not experience any disadvantages in their use of information and communication equipment and software).

As with the USA, web accessibility is part and parcel of Japan's mainstream procurement system. Yamada states the 2004 amendment to the Persons with Disabilities Fundamental Law is significant in the recognition given to web accessibility standards and the need for government to adhere to these standards. Private industry has also taken responsibility for addressing the special challenges that the Japanese character-set presents. For example, Fujitsu has been active in developing standards that enable Japanese specific characters to be displayed on the Internet (Iizuka, 2005).

Reflecting on the issue of compliance with web accessibility guidelines, it can be seen that this area is consistent with assessments made about compliance in other areas of ICT procurement. According to Yamada (2010), 'soft touch' compliance mechanisms dominate. He relates instances where system developers "develop and publish, free of charge, web accessibility checking tools" in order to obtain contracts. There is a realisation, more recently and particularly during the Great East Japan Earthquake in March 2011, that these measures have not led to acceptable levels of compliance (Yamada, 2011b).

Recent activity by the IT Strategic Committee within the Japanese cabinet has developed a new approach to the use of ICTs in Japanese society (MIAC, 2010). Shifting emphasis away from government, the new strategy seeks to develop citizen-led processes that will enable ICTs to better serve the needs of all, particularly the maintenance and development of local communities. In relation to people with disabilities, the specific measures that have been signalled are a refresh of

the JIS accessibility standards, increased subsidies for hardware and software and greater scrutiny of web accessibility compliance.

In response to changes to JIS X8431-3, the Japan Web Accessibility Consortium (JWAC) was established with the mandate to improve accessibility to public websites (Yamada, 2011b). It is anticipated that their work will also result in positive developments in private sector websites. A timetable under the 'Public Site for Everyone' program has been published with reporting deadlines as follows:

- Development and publication of "Web accessibility policies" by end FY2012
- Conformity with JIS X 8341-3:2010 Class A by end FY2013 (with publication of test results)
- Conformity with JIS X 8341-3:2010 Class AA by end FY2014 (with publication of test results)

3.3.3.   Discussion

Looking at the benchmarked position of Japan in Section 2.6.17, the case of Japan is notable because ICT accessibility criteria detailed in public procurement law are drawn from national standards. The scope of these standards is extensive covering information technology, telecommunications and web accessibility. It was for this reason that the benchmarking exercise was able to point to comprehensive accessibility standards within their public procurement regime. On the other hand, the compliance mechanisms are quite weak. This supports the assertions of disability advocates that avenues for legal redress in cases of discrimination against people with disabilities in Japan are very limited.

The unique use of national standards processes to codify accessibility points to the pre-eminent role that manufacturing plays in Japan's economy. As a major producer of ICT products, commercial incentives are seen to play a role in the development of accessible ICTs in Japan. For example, the growing needs of older people can be seen as the impetus for the Raku-Raku range of mobile phones and laptops. It is estimated that over 20 million Raku-Raku mobile phones were sold over the ten years from 2001 to 2011.[27] Given the ageing demographics of the Japanese population, it can be seen that greater commercial incentives will emerge to meet the needs of this growing market within Japanese society.

A primary goal of JISC is to promote the efficiency of Japanese manufacturing as well as its competitiveness on the world market. Being able to shape international standards, as was the case with JISC in the standards setting forums of the IEC and W3C, represents a significant advantage because domestic capabilities are ready-made for exploitation in the global market.

The globalisation of accessibility standards potentially provides opportunities for people with disabilities to travel beyond national borders with confidence that a minimum level of accessibility provisions is available for them (Yamada 2007a; 2007b). It also makes possible the integration of accessibility standards into inter-governmental treaties. For example, the work of the WTO in globalising public procurement standards represents one avenue by which accessibility standards could ultimately be applied to public procurement regimes worldwide.

Disability advocates in Japan would probably argue that the success of this vision is dependent on first getting the fundamentals on compliance correct. In the absence of a transparent mechanism that ensures that each government agency has applied the relevant accessibility standards when

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[27] See http://www.fujitsu.com/global/news/pr/archives/month/2011/20110915-01.html. Retrieved 6 March 2012.

purchasing ICTs, it is difficult to verify outcomes of their public procurement regime. Hence, the impressive progress Japan has made in developing industry-wide standards is tarnished somewhat by the lack of clarity about the impact these standards have actually had. This is the reason why Japan's efforts in monitoring compliance with their accessibility standards are rated low in this report's benchmarking exercise.

3.4. European Union Mandate 376

Current work by the European Union (EU) to develop its own set of accessibility standards for ICTs is being carried out under Mandate 376 which was issued by the European Commission in 2005 (EU, 2005). Mandate 376 (M376) represents the latest thinking within the EU about ICT accessibility criteria and the possibility to facilitate the application of an EU Directive on Public Procurement (EU, 2011a, p. 11). EU Directives are used to guide member governments in the development of national legislation and regulations to enable conformity and consistency in the treatment of important issues across the EU.

As detailed in the benchmarking tables of EU countries in the OECD (see Section 2.6), current Directives on Public Procurement require accessibility to be taken into account whenever possible when writing technical specifications. However the European Commission just issued a revised proposal making accessibility compulsory (EU, 2011c). The implementation of M376 will be very relevant in this context (EU, 2011d). The Commission has asked the European standardisation organisations in the Mandate to have coherence with international developments. It is noteworthy that the committees have drawn on the experience of countries such as the USA, Japan, Denmark and Ireland in their deliberations. The impetus for improvements in accessible ICTs that M376 seeks to promote are the needs of the 80 million EU citizens with disabilities represented by the European Disability Forum (EU, 2005). The ICT Standard Board's Design for All and Assistive Technology Standardisation Co-ordination Group (DATSCG) has also played an important role in promoting the need for greater accessibility in ICTs for EU citizens with disabilities.

The rationale for these latest initiatives within the EU is largely factored on the realisation that self-regulatory approaches that encourage the adoption of ICT accessibility criteria has led to fragmentation of regulations across member states (EU, 2011c). This in turn has created a challenge for manufacturers in seeking to respond to diverse requirements. The push for compulsory application of uniform accessibility criteria across the EU is seen as necessary to promote greater efficiencies in the manufacture and supply of accessible products and services.

3.4.1. The Mandate 376 (M376) process

It is anticipated that M376 will act as an incentive for manufacturers, suppliers and service providers to develop and offer accessible ICT devices, applications and services that will directly benefit people with disabilities. The main objectives of M376 are to:

- harmonise and facilitate the public procurement of accessible ICT products
- provide a mechanism to help public procurers use an electronic toolkit to determine the accessibility features in the procurement process

The European Commission issued the M376 to the three EU standards organisations:

- CEN (The European Committee for Standardization)
- CENELEC (The European committee for Electrotechnical Standardization)

- ETSI (The European Telecommunications Standards Institute)

For steering the work on the Mandate, CEN, CENELEC and ETSI have set up a Joint Working Group (JWG) on 'e-Accessibility'. Two expert groups carry out the actual work: an ETSI Specialist Task Force and a CEN/CENELEC project team. The objective of the work is to develop a European Standard (EN) that will include functional accessibility requirements applicable to all ICT products and services for use in public procurement of ICT in the EU Member States. The Mandate also specifies that the standard could also be used in private procurement. In addition, an 'e-accessibility toolkit' will be developed that will enable procurers within public bodies to make use of those harmonised requirements in procurement processes and provide additional information and support material.

At the time of writing the implementation of the Mandate was into its second phase. Phase 1 of the project saw the development of an inventory of European and international accessibility requirements and an assessment of suitable testing and conformity schemes. Phase 1 was completed in 2008 with the publication of two reports:

- ETSI TR 102 612 *Human Factors; European accessibility requirements for public procurement of products and services in the ICT domain* and
- CEN BTWG 185 & CENELEC BTWG 101-5 Report *Conformity assessment systems and schemes for accessibility requirements*.

Current efforts in Phase 2 of the project are aimed at pilot implementation of the Mandate where the focus of activities is on the production of the EN standard, the production of an online toolkit, and other technical reports. In production of the EN, an important aspect is to co-ordinate with the revision of the Section 508 standards in the USA, carried out by the US Access Board based on a policy dialogue on standardisation between the European Commission and the US government agencies. The online toolkit is aimed at providing guidance and support materials for public procurement of ICTs specifically addressing areas such as:

- IT planning guidelines
- accessible ICTs
- accessibility support needs
- inclusion of accessibility in ICT call for proposals
- verification of supplier claims of accessibility
- tracking the non-compliance of ICT products with accessibility requirements in tenders
- information on testing and conformity processes

These objectives will be achieved through the pilot procurement toolkit that is currently under development (the tender calling on this work closed on 30 September 2011). The pilot toolkit was slated for release in late 2012 with the final release of the toolkit six months later. However, the latest information available at the time of writing indicates that this timetable is under discussion.

3.4.2. Specifying accessibility criteria EU style

The latest thinking in dealing with the vexed topic of how to best codify accessibility requirements of modern equipment is reflected in the work of M376. The list of accessibility requirements signalled by M376 are described by nine broad functional requirements:

- Generic Requirements (see Box 3.1 for an example)
- Hardware

- Software and electronic content
- Audio Visual Equipment
- Audio Visual Content
- Real–time Conversation
- Authoring Tools
- Information documentation and technical support
- Implementation, operation, and maintenance

The functional requirements incorporate website accessibility guidelines detailed in WCAG 2.0. This guideline is incorporated through the functional requirement of *Software and electronic content - 4.3.1 Applicability*. Naturally, the online procurement toolkit is expected to meet WCAG 2.0 guidelines.

Even as a conservative step, the voluntary adoption of uniform standards by all EU member states would achieve much in addressing the fragmented nature of accessibility criteria in force within the EU. However, the European Commission, in its Work programme for 2012, seeks to achieve much more; Item 99 of the European Commission's Work Program lists the European Accessibility Act for consideration during 2012.[28]

3.4.3.   Aids to encourage compliance

Central to the task of ensuring a successful implementation of M376 is recognition that the complexity of the provisions requires a significant amount of information. A tender for an online toolkit has been advertised with the view to provision of a common set of online resources that will guide government procurers of ICTs throughout the EU in the purchasing of accessible ICTs. The purpose of the toolkit is to assist users to better deal with the volume of detail as indicated in the following documents.

ETSI EN 301 549 This document specifies the functional accessibility requirements applicable to ICT products and includes information about the test procedures and evaluation methodology for each requirement for use in public procurement. It is primarily useful for public procurers to identify the requirements for their purchases and for manufacturers to employ it within their design phase. The reference document highlights the procedures to be followed by different actors and this leads to similar testing and interpretation, which ensures transparency.

4.1   Generic requirements
4.1.1 Closed functionality
Some provision is required to address the case where assistive technology cannot be used to achieve some functionality for any reason such as licence or policy constraints. Consequently that closed functionality is required to be made available to and operable by people with disabilities within the product itself and provisions that relate to the connection of assistive technology would not apply.
(This requirement is being reviewed)

4.1.2 Biometrics
Where an ICT product or service uses a biometric form of user identification or control, either
a) an alternative biometric that uses a biological characteristic dissimilar to the biological characteristic of the default biometric shall be provided, or
b) a non-biometric alternative that does not require the user to possess any specific biological characteristic shall be provided.

4.1.3   Pass through

ICT that transmits or converts information or communication, shall either not remove non-proprietary information provided for accessibility or shall restore it on delivery.

4.1.4   Audio information alternatives
ICT shall not use audio as the only means of conveying information, indicating an action, or prompting a response.

4.1.5   Visual information alternatives
ICT products shall not rely solely on vision for conveying information needed to operate the product.

4.1.6   Colour
ICT shall not use colour as the only visual means of conveying information, indicating an action, prompting a response or distinguishing a visual element.

4.1.7   Text size
Some provision may be required to ensure that information presented as text is readable by those with reduced visual acuity.

4.1.8   Speech operation alternatives
Some provision is required to ensure that products do not rely on user speech to operate.

Box 3.1 Example list of functions requirements for Generic requirements.

(Source: EU, 2011 pp. 15-16)

ETSI TR 101 550 This ETSI resource highlights the documents used in the creation of EN 301 549 and provides a source reference for any other documents needed to implement the test procedures specified in that document. The document provides additional information about measurement methods in areas where there are currently no globally agreed testing mechanisms.

ETSI TR 101 551 Guidelines on accessibility award criteria for ICT products and services. This document provides guidance to procurers on the award criteria relevant to each area of user needs addressed in the accessible ICT procurement process.

CEN/CENELEC Report, Guidance on the application of conformity assessment of European accessibility requirements for public procurement of ICT products and services. A key outcome from public or private procurement processes is to ensure that the product offered by the supplier has the characteristics and qualities specified in the technical specifications and award criteria. This Technical Report (TR) provides guidance to the procurer on how to establish which conformity assessment systems or schemes the procuring body wants to refer to in its procurement policy related to accessibility.

CEN/CENELEC Report, *Online Procurement Toolkit* for accessible ICT products and services eAccessibility under mandate M376

CEN/CENELEC Report, Additional guidance and support material for the procurement of accessible ICT products and services.[29]

Other characteristics that the toolkit must possess are:
- Flexibility and scalability in order to ensure the possibility of multilingualism and adaptation to specific national situations
- Open source so that maintenance and development are not dependent on licensing
- The toolkit website meets the WCAG 2.0

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[29] All of these documents can be found at http://www.mandate376.eu/ Retrieved 11 March 2012

3.4.4. Discussion

It appears that EU members have opted to pursue a comprehensive set of accessibility standards in response to the failure of voluntary and self-regulatory approaches (EU, 2011c). The responsiveness of accessibility criteria to changes in the technology landscape will be of significance to people with disabilities and their ability to access new technologies. This appears fundamental to address the digital divide for people with disabilities in the EU.

The manner by which manufacturers respond to these requirements are of critical importance in reducing barriers for people with disabilities. It is anticipated that the adoption of a consistent set of criteria across the EU will create a single market leading to greater economies of scale in the manufacture of accessible products and services (EU, 2011c). It is understood that the transition will not be cost-free, but such costs are reasoned to be one-off in nature. The potential benefits for people with disabilities in terms of increased participation in economic and social life are considered to be ongoing and transformative. Lawmakers will be able to look to the adoption of accessibility criteria as being consistent with their country's commitments to the UNCRPD.

3.5. Canada

Canada has drawn on the work that has occurred in the United States in the development of a procurement toolkit for accessible ICTs. Industry Canada, a department within the Canadian Federal Government, has used Section 508 of the US Rehabilitation Act 1973 and Section 255 of the US Telecommunications Act in their work to develop a web portal called the Accessible Procurement Toolkit to guide purchasing decisions about ICTs. In contrast to the United States, however, the federal government has not made these provisions compulsory in their ICT procurement processes. D'Aubin (2007) characterises the Canadian approach to the procurement of accessible ICTs as one that is led by a "variety of economic, business, or market-based perspectives" rather than the human rights agenda used to frame the mandatory procurement provisions in the United States. Interestingly, it is the province of Ontario that has enacted the most stringent set of conditions for ICT accessibility in government procurement in Canada. Even so, these provisions are still considered to be less stringent that those used in the United States.

During 2010, the employment of people with disabilities in Canada's Public Service Commission was 3.1% (Public Service Commission of Canada, 2011). Trends generally indicate improvement for people with disabilities where there has been an increase in the percentage of people with disabilities in employment from 49.3% in 2001 to 53.5% in 2006, reducing the gap to the population without activity limitations with an employment rate of 75.1% in 2006 (HRDC, 2009).

3.5.1. Disability discrimination policy context

Canada signed the UNCRPD on 30 March 2007 and ratified it on 11 March 2010. The legal instruments that give effect to these obligations are numerous and exist both at the federal and provincial level.[30]

The Canadian Charter of Human Rights and Freedoms provides broad protection under the constitution for people with disabilities against discrimination. These rights are available to all

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[30] See *The Canadian Human Rights Act: Introduction to Canada's Federal Human Rights Legislation* available from: http://www.mapleleafweb.com/features/canadian-human-rights-act-introduction-canada-s-federal-human-rights-legislation Retrieved 20 April 2012.

Canadians and can be exercised through a court of law. However, the charter covers a broad range of rights and freedoms, not just discrimination and not just disabilities.

It is the Canadian Human Rights Act that provides for people with disabilities a set of detailed provisions that prohibit discrimination in specific areas such as the provision of goods and services, accommodation and employment.[31] However, the processes by which people with disabilities are able to seek redress for acts of discrimination are initially not through the courts but through a process of investigation and remediation that is administered by the Canadian Human Rights Commission. The Canadian Human Rights Tribunal, administered by the Commission, is authorised to make determinations should other processes fail. The Canadian Human Rights Act applies only to organisations that operate in the federal domain. Hence, discrimination by organisations that operate at the provincial level must be addressed through provincial human rights legislation.

Other areas of legislation that address disability access issues exist within transport and communications. Of specific relevance to government procurement of ICTs is the legislation that governs employment entitled the Employment Equity Act 1995. The implementation of this act within the federal government is covered by a Treasury Board policy document called *Duty to Accommodate Persons with Disabilities in the Federal Public Service*. A number of government organisations play a role in addressing access for people with disabilities such as Industry Canada's Assistive Devices Office and the Task Force on Access to Information for Print-Disabled Canadians.

3.5.2.   Public procurement and ICT accessibility criteria

The legislative instruments that govern national public procurement activities in Canada are found in the Canadian International Trade Tribunal Act, which is administered by the aptly named The Canadian International Trade Tribunal.[32] The CITT Act controls Canada's participation in the North American Free Trade Agreement (NAFTA) as well as agreements between federal and provincial legislatures called the Agreement on Internal Trade (AIT). Canada became a signatory to the WTO's GPA in 1996.

In 1998, a task force was set up by the Canadian Treasury Board to investigate the integration of persons with disabilities into the federal workplace through improved accessibility of ICTs (HREOC, 2005). One of the key recommendations from the task force was that the Canadian government adopt a policy of accessible procurement and implement it formally by adopting Industry Canada's Accessible Procurement Toolkit as the Government's official procurement tool.[33]

However, despite the availability of this procurement tool, federal legislation does not require national government bodies to procure accessible ICTs. As a consequence, in order for people with disabilities working in a federal organisation to seek re-dress for IT-related inequities in the workplace, they must rely on the provisions of the Employment Equity Act, which is administered by the Canadian Human Rights Commission and its Tribunal.

Persons developing or procuring websites for the Government of Canada must meet the requirements of the Common Look and Feel (CLF) standards. The CLF standards are administered by the Treasury Board of Canada and, as such, are separate to mainstream public procurement

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[31] See Canadian Human Rights Act available from: http://laws-lois.justice.gc.ca/eng/acts/h-6/page-1.html Retrieved 20 April 2012.

[32] See *Canadian international Trade Tribunal Strategic Plan*, 2010-2013 available from http://www.citt.gc.ca/index_e.asp Retrieved 20 April 2012.

[33] See Accessible Procurement Toolkit (APT) available from http://www.apt.gc.ca/ap10000E.asp Retrieved 20 April 2012.

processes for computing and telecommunications hardware and software.[34] CLF standards have existed in Canada since 2000. At the time of writing, new CLF standards that incorporate WCAG2.0 guidelines were being implemented in a three-phase program that began in June 2011 and is scheduled for completion by July 2013. The updated CLF2.0 standards are now comprised of three parts:

1. Standard on Web Accessibility
2. Standard on Web Usability
3. Standard on Email (from previous 2006 CLF Implementation)

The revamp of web accessibility standards follows a successful court action by Donna Jodhan who sought a declaration from the Federal Court that the Federal Government had breached her right to equal treatment under section 15(1) of the Canadian Charter of Rights and Freedoms, either by creating inadequate Internet accessibility standards for the visually impaired or by failing to implement existing standards.[35] The court found that the government had not implemented existing standards adequately and had failed to keep standards up to date with current WCAG 2.0 guidelines and was ordered to do so.

As a consequence, stronger incentives have been instituted to encourage compliance with the CLF 2.0 web accessibility requirements. An online Web Experience Toolkit (WET) is available for government departments to refer to and use when developing their websites to the new standards of CLF 2.0.[36] Compliance checking of government websites will be carried out annually where each department is required to indicate to the Treasury Board Secretariat their compliance using an online reporting mechanism called the Web Inventory Tool.

Recognition of the needs of people with disabilities is found in the two places in the documentation that guides the implementation of the new CLF 2.0 standards.[37] In a section called Progressive Enhancement, developers are advised that core content and functionality must be accessible to people with disabilities. This can be achieved by ensuring that any enhancement employed by end-user technologies does not interfere with core content or functionality. Another section states that web developers are required to employ the standards set down by W3C using the Accessible Rich Internet Applications Suite (WAI-ARIA), which defines a standard that enables assistive technologies to interact with web content.

By way of contrast, the province of Ontario is noted for the stricter regime in place for the purchase of accessible ICTs by government. The autonomy of provinces in Canada to regulate matters as they apply to provincial organisations and individuals has resulted in one province leading the way in relation to public procurement practices. In Ontario, the Ontarians with Disabilities Act 2001*,* adopted on December 14 2001, states in Article 5:

> *In deciding to purchase goods or services through the procurement process for the use of itself, its employees or the public, the government of Ontario shall have regard to the accessibility for persons with disabilities to the goods or services.*

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[34] See *Guidance on Implementing the Standard on Web Accessibility* available from: http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?section=text&id=23844 Retrieved 20 April 2012.
[35] See *Accessible News* #42 - Fall 2010. at http://www.at-links.gc.ca/as/zx21042e.asp#b1 Retrieved 29 April 2012.
[36] Ibid.
[37] Ibid.

The Government of Ontario shall provide its Internet sites in a format that is accessible to persons with disabilities, unless it is not technically feasible to do so.[38]

Subsequent to this, the Accessibility For Ontarians With Disabilities Act, 2005 sought to impose a stricter and more binding set of conditions on all organisations (public and private) and individuals when dealing with people with disabilities within Ontario.[39] The publication of a set of regulations on 7 June 2011 called the *Integrated Accessibility Standards* makes explicit the conditions under which greater accessibility for people with disabilities inside Ontario will occur.[40] The regulations detail accessibility standards in the areas of information and communication, employment and transportation as well as provide a clear set of compliance mechanisms enforceable through monetary penalties. Within these standards clear reference is made to government procurement in Section 5.1 where it states:

The Government of Ontario, Legislative Assembly and designated public sector organizations shall incorporate accessibility criteria and features when procuring or acquiring goods, services or facilities, except where it is not practicable to do so.

It goes on to say that government entities responsible for not adhering to accessibility requirements when procuring goods and services are required to provide a letter of explanation.

The wording of Ontario's provincial legislation is highlighted because it provides a more explicit set of protections to people with disabilities than exist in the federal sphere. This is also exemplified in sanctions that can be imposed for not adhering to these laws. Ontario's approach to compliance as detailed in the Integrated Accessibility Standards as part of the Accessibility For Ontarians With Disabilities Act outlines procedures that lead to the possibility of monetary penalties of up to $50,000 per day for individuals for continued breaches, and $100,000 per day for corporations. Determination of such penalties lies in the hands of a Director who is appointed by the Minister responsible. While there are avenues of appeal, it can be seen that a clear set of consequences can follow when individuals and organisations are found to have breached the regulations.

3.5.3.   Discussion

Given the adoption of the WCAG2.0 standards for web accessibility, it can be seen that only a limited set of accessibility criteria have legal force within Canada's federal agencies. Even though these criteria are not part of official procurement procedures, the legal authority to make regulations for web accessibility comes from the Treasury Board. The ability to monitor the application of this limited set of accessibility criteria is assisted by published guidelines, procedures and a reporting timetable for Senior Department Officials, Chief Information Officers, Head of Communications and other related functionaries listed on the Treasury Board's website. A web-based compliance tool is available to ensure that all agencies follow the same procedure. During the course of this research, information about tests for non-compliance with WCAG 2.0 was not found. Given the fact that the latest changes came as a consequence of court action by an individual under the Human Rights Act makes the absence of such mechanisms even more curious. Given the recent nature of these developments this may have since changed since publication of this report.

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[38] See 'Ontarians with Disabilities Act 2001' available from http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_01o32_e.htm Retrieved 20 April 2012.

[39] See 'Accessibility for Ontarians with Disabilities Act, 2005' available from: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_05a11_e.htm Retrieved 20 April 2012.

[40] See regulations associated with Accessibility for Ontarians with Disabilities Act 2005 available from:http://www.e-laws.gov.on.ca/html/source/regs/english/2011/elaws_src_regs_r11191_e.htm#BK5 Retrieved 20 April 2012.

Having the USA as a neighbour invites comparisons between what D'Aubin (2007) describes as Canada's 'market-led' approaches to ICT accessibility and the U.S's 'rights-based' approach. Within the context of the time (2007), Waddell considered the attention that Canada had given to the development of the procurement toolkit was worthy of praise for the way the tool encouraged purchase of accessible ICTs by agencies (EU, 2007). It was reported that five major procurements and two smaller procurements had taken place in Canada using the online procurement toolkit. A recent update provided by Holloway from Industry Canada (personal communication, 2 February 2012) indicates that usage of the toolkit has declined slightly in the period 2007-2012. He attributes this decline to the availability of other online resources. In his opinion, a greater choice of online information is a positive development.

D'Aubin (2007) comments that the market-led incentives for compliance in Canada are relatively weak and argues that a more pro-active and compulsory compliance regime for accessible ICTs based on human rights principles would be more effective in delivering accessible ICTs to people with disabilities, not only in the workplace but more generally. Commentary on the Council of Canadians with Disabilities (CCD) website indicates that there is dissatisfaction with current (market-led) responses from the Federal Government with advocates still calling for a rights-based approach to technology access.[41]

The Ontarian experience, with their stricter set of ICT accessibility laws, has led to a focus on developing a suitable policy context to enable standards development. In Beer's (2010, pp. 52-53) review of the Accessibility for Ontarians with Disabilities Act 2005, he finds that the combination of complexity of standards and the absence of a central coordination body has undermined the purpose of this law. He recommends, among other things, the establishment of an independent body that is focussed on overseeing disability standards development.

3.6.   Ireland

While there is an obligation for public bodies to address the question of accessibility when procuring ICTs, the process of making accessible ICTs available to employees and the public is primarily through the Disability Act 2005. Ireland is an interesting case to study because of the establishment of the statutory authority, the National Disability Authority (NDA) and its Centre of Excellence on Universal Design (CEUD). The NDA is responsible for administering the Disability Act 2005 which details the ways in which individuals and organisations are to interact with people with disabilities. Accessibility provisions form an important aspect to these provisions. Ireland's membership of the European Union (EU) also provides an interesting insight for those unfamiliar with the workings of the governance processes of the EU. Ireland's procurement regulations have largely been adopted from the EU's Directive on Public Procurement from 2004.

3.6.1.   Disability discrimination policy context

Ireland became a signatory to the UNCRPD on 30 March 2007, but has not ratified it as yet. It is not a signatory to the Optional Protocol.

Legislation that gives greatest effect to Ireland's response to the UNCRPD is the Disability Act 2005. The Disability Act 2005 provides a statute-based right for people with disabilities to an assessment of their health, personalised access to social services and education needs (Houses of the Oireachtas, 2005). As well as focussing on access to public services and information, the Act also seeks to

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[41] See CCD's 'Access to Technology Committee' http://www.ccdonline.ca/en/technology/ Retrieved 11 March 2012

facilitate access to public service employment. Public sector organisations are obliged to promote and support the employment of people with disabilities, and, under Section 47(4) of the Act, achieve a statutory minimum target of 3% of staff with disabilities.

The National Disability Authority (NDA) works under the auspices of the Disability Act 2005 (and the National Disability Authority Act 1999) and is a statutory body that provides specialist advice to the Minister for Justice, Equality and Law Reform (NDA, 2011). The advice ranges from policy matters to the practical implementation of Ireland's legislative provisions as they relate to people with disabilities. It is therefore responsible for developing strategies to assist people with disabilities in areas such as education, health, transport, housing, employment and training. It also has the responsibility of monitoring compliance of government bodies with the accessibility requirements under the Act.

As part of the NDA, the Centre of Excellence in Universal Design (CEUD) is responsible for leadership in the design of accessible information technologies and the built environments (NDA, 2011). The goal of the CEUD is to develop universal design principles that eliminate common barriers that people with disabilities experience in their physical environment as well as in their use of ICTs. CEUD has played an active role not only in standards setting within Ireland but has also played a leading role in the European Design for All Accessibility Network.

3.6.2.   Public procurement and ICT accessibility criteria

The National Procurement Service (NPS) sits within the Office of Public Works and is responsible to the Minister of Finance. Public Sector Procurement Regulations 2006 are the regulations under which the NPS operates (NPS, 2006). These regulations are consistent with EU Directive 2004/18/EC public procurement. As part of the EU, Ireland became a signatory to the WTO GPA in 1996.

Recognition of the possible need for the procurement of accessible equipment for people with disabilities is found in Section 23.2 of the regulations where it states:

> *In awarding a public contract, a contracting authority shall, as far as practicable, ensure that the technical specifications for the contract take account of the need to prescribe accessibility criteria for all persons who are likely to use the relevant works, products or service, particularly those who have disabilities.*

While all government agencies are required to at least consider accessibility criteria and the needs of people with disabilities in their purchase of ICTs, no specific accessibility standards are referred to.[42] Government agencies that wish to include accessible hardware or software are fortunate because the Centre of Excellence in Universal Design (CEUD) has been at the forefront in developing an excellent range of resources that assist purchasers to develop accessibility. The resources include an online toolkit, which is designed to both educate and assist purchasers of ICTs to make decisions that best cater for the accessibility needs of prospective users. Whether a government agency decides to use these services or not is for it to decide.

The Web Accessibility Guidelines made available by the CEUD are comprehensive and are cross-referenced to the checkpoints found in the WCAG1.0 guidelines.[43] The procurement toolkit is

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[42] In the interests of completeness, Ireland's procurement regulations also contain set-asides that enable businesses that employ a large proportion of people with disabilities to be given more favourable treatment than organisation that do not.

[43] http://www.universaldesign.ie/web-resources/guidance/guidance-v-wai-wcag-1-0-nda-guidelines

notable for the way it educates as it guides readers through their decision-making. Information is presented in a way where individuals can choose resources that are appropriate to their level of understanding and their relative progress through the procurement process (such as request for tender or tender assessment). Hence, potential procurers of ICTs are given an insight into the experience of people with a range of disabilities in their use of ICTs.

The NDA appears to be quietly working behind the scenes to raise awareness of the potential benefits of including accessibility criteria within public procurement. A paper presented by an Access Officer in the NDA at their annual conference for Access Officers in 2009 details an experiment in the use of accessibility criteria when designing a playground in Monaghan County (Bradley, 2009). While ICTs were not the focus of this account, the report noted the positive outcomes when accessibility criteria are specified in the tender specifications. The response from the companies that submitted tenders included a number of creative ideas that the project officer felt sure would not have been included if accessibility criteria had not been specified. As a consequence, people with disabilities in the community in the south of Monaghan County are now able to better use this new facility.

In summary, the public procurement system in Ireland does not require, but rather, encourages a pro-active approach to the diffusion of accessible ICTs. It is left for the Disability Act to provide greater impetus to the provision of accessible ICTs by broadly defining suggested technologies that may address the needs of people with disabilities. The *Code of Practice on Accessibility of Public Services and Information* provides a detailed response to this issue by listing a range of accessible formats such as "large print, Braille, electronic communications that can be accessed with adaptive technology and audio tape" (NDA, 2006). The Code also states that the websites of public agencies must be compliant with WCAG1.0 guidelines to a level of AA conformance level (NDA, 2006).

While the accessibility criteria reads as a compulsory provision, in practice it is far from this. The reality is that the active monitoring of all public agencies is beyond the resources of the NDA. In 2009, the NDA issued a questionnaire to 568 public bodies so that each organisation could report their compliance with the Disability Act (NDA, 2009). Only 203 organisations returned a completed questionnaire. From the data provided by the 203 respondents, it was clear that many of these organisations were far from being compliant with the Act.

Whereas the response rate of 35% appears as a reliable sample from a statistical perspective, the 65% of public bodies who did not respond to the survey are clearly in breach of their obligations under the Act as were the agencies that reported deficiencies in their responses to the survey. While members of the public would, presumably, be able to pursue alleged breaches through the Equality Tribunal, questions arise about the effectiveness of the compliance regime. Curiously, the poor showing in their annual survey did not seem to raise alarm in the NDA and seems to be consistent with a general strategy of a 'softly-softly' approach to encouraging voluntary compliance.

3.6.3.   Discussion

Given a will to implement accessibility criteria either with ICTs or in the built environment, individuals and organisations in Ireland are well resourced to carry out such initiatives. The NDA and the CEUD provide a range of high quality resources that are publicly available through their respective websites. In summarising the case of Ireland for the purposes of benchmarking, we note that the main vehicle for the delivery of accessible ICTs to the public is through the Disability Act 2005 and related statutory authority, the NDA. Accessibility criteria, while mentioned in public procurement regulations, are non-specific and are not compulsory.

In the case of Ireland, it is interesting to note the practical effect of ICT accessibility criteria detailed in their Disability Act. The Disability Act 2005 imposes significant statutory duties upon public bodies to make their services and information accessible to people with disabilities where practicable and appropriate. The Act qualifies this by explaining that the determination of practicability and appropriateness may be guided by consideration of the level of control and cost. How the attributes of 'practicality' and 'appropriateness' have played out in the seven years since the Act was put into place, in comparison with cases in which mandatory ICT accessibility criteria have been applied within procurement law, is of particular interest.

As in the case of Japan, judgements are coloured significantly by compliance. While it is clearly of benefit to have an active agenda to promote accessibility for people with disabilities, an absence of sanctions for poor compliance raises questions about the strength of incentives to comply with accessibility provisions. Despite the imposition of mandatory requirements for public agencies in Ireland, the consequences of not meeting these obligations appear to be minimal. The poor response rate to the annual web accessibility survey mentioned previously is a case in point. Public agencies have not once achieved the 3% statutory minimum for the employment of people with disabilities (NDA, 2011). So, despite the world-leading efforts of the NDA and the CEUD to raise awareness of accessibility criteria and universal design principles, it has not led to the changes expressed within the Act.

Given the strong capabilities Ireland possess in the form of the NDA and CEUD, it will be interesting to see how signalled changes to EU procurement law that will include ICT accessibility criteria, will play out. Accordingly, Ireland will remain a case for ongoing interest.

3.7.   United Kingdom

The United Kingdom (UK) is chosen for analysis for the way a range of stakeholders, including industry, have been brought together to generate solutions to common barriers for people with disabilities. An initiative by the Department of Culture, Media and Sport is a response to the newly enacted Equality Act 2010, which has replaced a number of areas of discrimination law to consolidate and make equity provisions more simple and consistent. The interesting feature of this case is the involvement by business in the process. The Business Taskforce on Accessible Technology (BTAT) argues that a clear business case underpins the adoption of ICT accessibility criteria. Consequently, this case represents a unique example where the potential of greater productivity is linked to the ICT accessibility criteria. This in turn has given impetus to promote the use of accessibility criteria in public procurement.

3.7.1.   Disability discrimination policy context

The UK signed the UNCRPD in 2007 and ratified the Convention in 2009. It has also signed and ratified the Optional Protocol in 2009. The introduction of the Equality Act in 2010 was designed to consolidate previous pieces of equality law with the purpose of simplifying and providing greater consistency in the treatment of discrimination. The previous areas of law included the Equal Pay Act 1970, the Sex Discrimination Act 1975, the Race Relations Act 1976, the Disability Discrimination Act 1995, and attendant statutory instruments.

Three Codes of Practice accompany the new Equality Act and are designed to provide guidance in the interpretation of the Act in the areas of employment, services and equal pay. While the codes are not legal instruments in themselves, their purpose, in large part, is to provide guidance to the courts, lawyers, trade unions and others by applying the Act to everyday situations. The Equality and Human Rights Commission plays a central role in advising and assisting individuals and groups about

the Equality Act. It may choose to participate in proceedings on behalf of individuals if there are opportunities to better define legal aspects of the Act, or it may support individuals and groups by providing financial assistance and referrals to organisations that have specialist legal expertise.

3.7.2. Public procurement and ICT accessibility criteria

The Office of Government Commerce (OGC) is an independent body responsible for the UK Government's procurement policy. In December 2011 the OGC was brought under the umbrella of the Cabinet Office in a general strategy to reduce government spending. Buying Solutions (BS) is the national procurement partner for the UK public services and is an executive agency of the Office of Government Commerce. The key function of BS is to maximise the value for money obtained by Government departments and other public bodies through the procurement of goods and services.

As with the case in Ireland, the UK's procurement regulations are consistent with the EU Directive 2004/18/EC on public procurement. Also in line with the Irish case, whether or not to include accessibility criteria in the purchase of ICTs is discretionary. Article 9(3) of the Public Contracts Regulations 2006 regarding technical specifications states that a contracting authority

> *Shall, wherever possible, take into account accessibility for disabled persons or the suitability for design for all users*

Much activity in relation to the promotion of accessible ICTs has been occurring within the eAccessibility Forum and Action Plan under the auspices of the Department of Culture Media and Sport (DCMS, 2011a). The intention of the Minister is to promote broad stakeholder involvement to address problems in a range of ICT related areas. While not ruling out the possibility of regulatory changes, stakeholder-led processes that draw on a broad range of knowledge and experiences are considered preferable to government regulation and are key to the success of this initiative. The eAccessibility Forum and Action Plan sponsors five areas of enquiry (DCMS, 2011b).

- **Regulatory Work Stream*** The work stream will help delivery of a clear regulatory framework for businesses and the voluntary sector to operate in.

- **Accessible Consumer Technology and Digital Equipment Work Stream** The work stream will look at what consumer technology and digital equipment is available on the market and how issues surrounding affordability and availability of assistive technologies can be overcome.

- **Websites Services Work Stream*** The work stream will work to make websites in the public and private sector more accessible, and help guide people to websites that are well-designed for their needs.

- **Accessible Content Work Stream*** The work stream will continue to look at issues relating to television subtitles, audio-description and other accessibility features; and how a wider selection of publishing materials (such as e-books) can be made accessible to the visually impaired.

- **Awareness and Promotion Work Stream** The work stream will promote and raise awareness of eAccessibility principles and how it can achieve an inclusive society.

The work streams that have been active in promoting ICT accessibility are marked with an asterix*.

Activities that aim to promote accessible ICTs are notable for four reasons.

1. Activity in work stream 1, Regulatory, is significant for the identification of public procurement as an avenue by which accessible ICTs can be diffused. The October 2011 report on activity in

this stream states that the OGC has agreed in principle to widen their remit to include accessibility criteria in public procurement guidelines. This change occurred in tandem with the move of the OGC to the Cabinet Offices' Digital Strategy Team. The Action Plan report (June p. 16 and Oct Section 1.3.1) reports that OGC was in the process of implementing this initiative.

At the time of writing, this initiative seemed to be at an early stage of development rather than completion. Feedback from the Cabinet Office Helpdesk advised that the Procurement Policy and the Government Digital Services teams were not actively considering accessibility criteria at present. Along with other EU countries, UK procurement officials are presumably waiting on the outcomes of EU's Mandate 376 process.

2. A second significant area of activity works toward the incorporation of web accessibility guidelines into websites (DCMS, 2011b; see Websites Services Work Stream). British Standards BS8788 is designed to assist in this move and is compatible with the latest developments from WCAG 2.0. Greater pressure is being placed on government agencies to improve the accessibility of their websites. The document used in the design of websites by public agencies, *Delivering Inclusive Websites: Guidance number: TG102*, has been updated to take account of BS 8788 and a timetable has been imposed on government agencies to improve accessibility on websites. Web accessibility of public websites will be monitored by the Equality and Human Rights Commission as part of their monitoring of the public sector equality duty provisions of the Equality Act.

3. The third area of significance has been strong private sector support in the form of the Business Taskforce for Accessible Technology (BTAT) (DCMS, 2011b; see Regulatory Work Stream). The work of the Business Taskforce on Accessible Technology (BTAT) is an interesting example where inclusion and accessibility are seen as drivers of greater levels of productivity by business particularly with increasing prevalence of digital technologies. Support of the Accessible Technology Charter from companies such as Cisco, Microsoft, SAP, Oracle and Logica provides an indication of the potential impact that BTAT may have on the inclusion of accessibility criteria in mainstream commercial technologies. The taskforce is responsible for developing a toolkit that enables businesses to assess their level of accessibility readiness through an Accessibility Maturity Model.[44]

4. The fourth area of significance relates to the proposition that expertise in accessibility and inclusive design is an area worthy of professional accreditation that can be standardised across international contexts.

Current indications show that some progress in web accessibility standards has been made across the public and private sector. For example, web accessibility standards have been codified into a British standard BS8788 that is available for any organisation to use. The standard is marketed as a voluntary standard of best practice information and processes to embed accessibility into an organisation's web production processes (Watson, 2012). The intention is to enable organisations to develop an overall plan of action for website management from creation to deployment and onwards. The standards have been written to address specific aspects of UK law but are not compulsory.

Currently, much of the legislative force of web accessibility criteria appears to be dependent on the Equality Act. For public websites, this is embodied within the public sector equality duty provisions of the Act, which requires public authorities to publish how they have addressed the relevant provisions of their equality duty. The Central Office of Information (COI) was responsible for the

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[44] See http://www.btat.org/toolkit/maturity-model Retrieved 8 March 2012.

setting of standards for government websites in the UK.[45] They placed a January 2010 deadline on the production of websites with a minimum level of AA compliance with WCAG 1.0.[46] Recent eAccessibility reports indicate that WCAG 2.0 has been replaced by BS8788. As part of the Equality and Human Rights Commission's brief from February 2012 to monitor the publication of each agencies equality duty, accessibility will be checked.[47]

> *We will be particularly interested in assessing: Whether equality information can be found at all, how accessible it is and the ease of navigation. We'll also be looking at how organisations have organised the information and how effectively they have signposted site visitors to it.*

Notably, no specific mention of BS8788 or WCAG criteria was found in this research

The Equality and Human Right Commission has a number of avenues open to it to encourage compliance. These in summary include the following.

- Legal powers – the Commission has the resources to take non-complying organisations to court. However, their preference is to encourage compliance through education and assistance. Where appropriate, statutory enforcement powers (Section 31 of the Equality Act 2006) are used to assess the extent to, or the manner in which, a person has complied with both the general and specific duty. The Commission has a power to enforce breaches of the general equality duty by serving a compliance notice upon completion of a formal assessment (under Section 31 of the Equality Act 2006). It has a power to enforce the specific duties by serving a compliance notice. It may also enter into an agreement with the authority whereby the authority agrees to take certain steps to comply and, in return, the Commission agrees not to issue a compliance notice.

- Judicial review - The Commission has a power to institute judicial review proceedings in matters of relevance to its functions including where a public authority has breached the general equality duty.

- Interventions - The Commission has a power to intervene in proceedings to assist the court in clarifying the law.

The extent to which the Commission would be willing to go to enforce accessibility provisions on the websites of public authorities remains to be seen.

In relation to the private sector and its adoption of web accessibility standards, the Royal National Institute of Blind People (RNIB) was, at the time of the research, suing a company (BMI Baby) over its failure to deal with the poor accessibility of its website.[48] RNIB is hoping to establish a legal precedent that will require other private sector organisations (as well as public agencies) to adhere to minimum levels of web accessibility. RNIB argues that the Equality Act 2010 is anticipatory,

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[45] As an indication of the changes occurring in the UK, the COI was due to close on 31 March 2012 and its entire framework agreements transferred to the Government Procurement Service.

[46] See http://coi.gov.uk/guidance.php?page=144 Retrieved 9 March 2012.

[47] See http://www.equalityhumanrights.com/advice-and-guidance/public-sector-equality-duty/monitoring-and-enforcement/ Retrieved 9 March 2012

[48] See http://www.rnib.org.uk/professionals/webaccessibility/lawsandstandards/Pages/uk_law.aspx Retrieved 9 March 2012.

meaning that companies can be called to account for poor accessibility features if it can be reasonably assumed that people with disabilities will need the goods or services on offer.

In summary, while there is a firm legislative commitment to include web accessibility criteria, these requirements have been grouped with many other equality requirements. It will be of interest to see if the Human Rights and Equality Commission will be willing to pursue the issue of web accessibility with as much vigour as it does other areas of discrimination.

Employees with disabilities expect that new software systems are compatible with assistive technology such as voice-recognition software. If this is not the case, it represents a breach of the Equality Act 2010 under the employer's reasonable adjustments responsibilities.

Moving on to the interesting role that business groups are playing in promoting ICT accessibility, a report published by One Voice for Accessible ICT provides an illuminating insight into the efforts of the private and the public sectors to promote the business benefits of accessible ICTs (Ashington, 2009). The report draws on numerous case studies from both the public and private sector. Common to all cases is recognition of the potential of accessible technology and services, which Barclay's CEO, John Varley, claims

> *opens up new markets, increases productivity and liberates talent, and enables the provision of innovative accessible technologies based on an understanding of individuals' technological aspirations (Ashington, 2009).*

Potential benefits in the adoption of accessible ICTs are found to lie within improved interactions with new and existing customers, greater loyalty and productivity from employees, improved business processes within the organisation and improved financial outcomes. One example of this is outlined in the case of HM Revenue & Customs (HMRC) which summarised how it was able to achieve improved outcomes through the adoption of new principles that included embracing accessible ICTs (see Box 3.2).

The report provides a number of practical examples of how accessibility criteria can be applied. Common to all of these approaches is a commitment of the organisation to achieving the ideals of an accessible workplace and the involvement of people with specialist expertise in accessibility to advise and manage the procurement of ICTs.

The report is also notable for the challenges that have been made by some companies to conventional approaches to centralised purchasing of ICTs. The minimisation of costs through standardised desktops is only realised if employees with specific ICT needs are able to be productive. The alternative approach broadens the definitions of standards to incorporate the needs of these users to enable them to

> *use all desktop environments and applications with their preferred profile settings and any assistive technologies (ATs) (Ashington, 2009, p. 9)*

3.7.3.   Discussion

The UK is not the first country that has developed a high profile and innovative response to the question of the digital divide. The question from the review of other countries in this research that have similarly been praised for their work is whether tangible benefits eventually flow. While there are signs that public procurement will play a more decisive role in the supply of accessible ICTs, much will depend on decisions currently being considered by the EU Mandate 376. In the case of

web accessibility in the UK, there are signs that stronger compliance mechanisms are starting to emerge in the form of the Equality Duty of public agencies supervised by the Human Rights and Equality Commission and the possibility of a strong lead from the courts in relation to making the private sector compliant with web accessibility. Tangible progress has been made in some public and private sector organisations. Innovative accessibility initiatives are apparent, including ICT procurement schemes that standardise the provision of common assistive technologies in the corporate software suite and involve representatives from user groups to assist in making appropriate purchasing decisions about accessible ICTs. It appears that the UK may be on the cusp of something quite exciting.

In summary, it can be seen that the UK has taken a number of positive steps through the Equality Act 2010. Whether similar advances will be made in the area of public procurement remains to be seen. The mooted changes signalled by the Department of Media, Culture and Sport have merely been noted by a spokesperson from the Cabinet Office when responding to questions from this research. With the EU's Mandate 376 process nearing completion, it would appear premature to make changes to procurement law.

Employees

- recruit from the widest possible pool – with the knowledge that any employee's ICT requirements will be catered for

- ensure the workforce is representative of the population they serve – demonstrating employees are valued as individuals by providing evidence on taking ICT accessibility seriously

- retain experienced employees – who develop a specific ICT need during the course of their careers.

Internal Processes

- improve service standards – a higher standard of system build from a clear and consistent software development lifecycle, incorporating accessibility

- create expert communities – the disability network enables employees with specific ICT needs to share experience, raise issues and provide feedback on policy guidance to [disability coordinators]

- promote best practice – raising awareness of the system development community of ICT accessibility and its importance.

Financial

- improve ROI – guaranteeing that when paying for systems to be developed, they are fit for purpose

- avoid legal fees/damage – ensuring systems are tested and conform to HMRC accessibility standard. (Ashington, 2009, p. 26)

Box 3.2 Embracing ICT Accessibility has potential to improve Human Resource Management in the organisation for all employees

3.8.   Reflecting on the in-depth case studies

The benchmarking exercise and the in-depth cases provide a diverse picture of ICT accessibility criteria in public procurement within OECD countries. The following discussion brings together these diverse attributes in a discussion that addresses the following key questions.

- Scope of Application: are web accessibility standards sufficient?
- Is accessibility criteria best applied in public procurement law?
- Monitoring and compliance: are sticks better than carrots?

3.8.1.   Scope of ICT accessibility standards: are web accessibility standards sufficient?

The research was able to reveal the extent to which web accessibility criteria had been adopted by governments in preference to comprehensive accessibility criteria (which includes computers and telecommunications equipment and related software). The context in which web accessibility criteria is implemented suggests that the main purpose of these initiatives is to enable the public, including people with disabilities, to better interact with government websites as part of eGovernment initiatives.

The increasing use of web accessibility criteria by governments is a welcome development. The increasing prevalence of web-based applications means that some of the interactions people have with computers will be covered by web accessibility criteria such as WCAG 2.0. The work of the W3C in the development of WCAG 1.0 and 2.0 has been beneficial in raising the profile of people with disabilities in forums that are largely focused on the technicalities of web design.

However, web accessibility guidelines on their own do not address accessibility of a range of other office technologies. There has been a shift to screen-based interfaces, even in phones, but that does not mean that the same criteria that apply to the use of web technologies on the office intranet can be applied to office equipment such as telephone handsets or database systems which are critical to business processes. For example, web accessibility has little to say about the interactions that occur between commercial software packages and the manner in which accessibility features are maintained. This is evident in the standards setting work in Japan where web accessibility represents just one part of a seven-part agenda for JISC standard JIS X 8341.

3.8.2.   Is ICT accessibility criteria best applied in public procurement law?

It is evident from the cases that high levels of compliance are not found where voluntary incentives dominate,. This is even true for cases in which the limited subset of web accessibility is applied. That is not to say that organisations were hostile to the imposition of ICT accessibility criteria. The task of implementing ICT accessibility criteria is not straightforward and, given the limitations of time and resources, it is reasonable to conclude that high levels of compliance will not occur without stronger regulatory and commercial incentives.

The alternative of mandatory ICT accessibility in public procurement addresses many of the shortcomings of voluntary approaches but there are significant challenges implicit in such a choice. Before dealing with these challenges, the discussion first looks to the positive implications of mandatory ICT accessibility criteria in public procurement.

The pros of mandatory ICT accessibility criteria in public procurement

The research indicates that the mandatory use of accessibility criteria in public procurement of ICTs provides a positive commercial impetus that manufacturers and vendors respond to. While manufacturers and suppliers may initially believe that adding accessibility to their products will be an added cost with limited returns, the combined factors of ageing populations in countries such as Japan and the need to find new markets will lead many to see the commercial benefits in meeting the needs of individuals who have disabilities. Manufacturers who have taken the initiative to make their products accessible stand to be rewarded when ICT accessibility criteria are made mandatory which, in turn, places competitive pressures on other manufacturers who are yet to make their ICT products accessible.

Another commercial benefit in the mandatory use of accessibility criteria in public procurement of ICTs is that all manufacturers have a common set of criteria that they must address. The commentary from industry indicates that this level playing field is much preferred to a situation in which accessibility criteria have not been clearly defined or are not uniformly enforced. For example, For example, some industry representatives in the USA have expressed frustration at the slow pace or progress within the Section 508 refresh. This represents a significant change to the ambivalence that industry has displayed to accessibility criteria in the past.

Another benefit from the imposition of accessibility criteria means that the availability of accessible products to one area of government jurisdiction does have flow-on effects to other areas. In the USA, for example, twenty states have followed the lead of the Federal Government and mandated Section 508 accessibility standards in ICT purchasing. Educational institutions have adopted Section 508 standards in whole or in part.

Mandatory accessibility criteria in ICT public procurement will likely lead to greater awareness among ICT professionals of the needs of people with disabilities and the technical issues that attend the technologies that are commonly used by this group. Yamada (2007, p. 8) makes the point that mandatory accessibility requirements in public procurement play an important role in educating designers about the challenges and limitations of current products. This will ideally set them on a path to develop innovations in accessibility features. The need for greater recognition of the skills that lead to the development of accessible products and systems has been acknowledged by the working groups established by the UK Department of Media, Culture and Sports' Accessibility Forum and Action Plan where recommendations urge that greater recognitions be given to these capabilities by educational and professional organisations.

The cons of mandatory ICT accessibility criteria in public procurement

Having broadly outlined the reasons in favour of a policy for mandatory ICT accessibility criteria in public procurement the discussion moves on to address the downside factors that the research has revealed. The difficulties of implementing such a policy relate to managing the increased complexities of developing and implementing new standards. Yamada (2007, p. 7) describes it as the tension between setting broad functional criteria as opposed to detailed quantitative criteria. Attempts to achieve the latter have resulted in detailed, and sometimes arcane, specifications that require considerable experience to interpret. On the other hand, inclusion of the former in a tender specification leaves so many options open that manufacturers complain that they are never quite certain whether they have properly addressed the criteria. Government purchasing officers, who are required to develop a transparent framework to enable the relative merits of competing tenders to be assessed, appreciate this problem too.

Add to this the rapid changes in technology, which challenge many of the assumptions about the technologies that the standards refer to. Is a smartphone a telephone or a computer or personal assistant device or all three?

The implications require a careful appraisal of the issues. Yamada (2007) counsels that the first response is to institute a lead-time to the introduction of mandatory accessible ICT procurement to give manufacturers and suppliers time to adjust. As Thoren (2007) argues, rather than requiring manufacturers to respond to tender criteria on a one-by-one basis, the application of accessibility criteria is best achieved through a strategic relationship between government and industry.

Yamada (2007, pp. 18-24) makes a number of suggestions by which such a relationship between government and industry could develop. These include

- Self-declaration – manufacturers report on their own compliance with accessibility criteria. This method may suffer from poor objectivity.
- Self-declaration with challenge or post-market surveillance – this relies on manufacturers keeping a check on each other. It may be less effective if manufacturers collectively ignore selected accessibility criteria.
- Best practitioner method – an impartial industry body conducts a survey by which competing manufacturers are assessed to determine which manufacturer achieves the best accessibility features.
- Top runner approach – is similar to best practitioner but assessment is conducted by independent peer review and 'top runners' selected on the basis of products with the best accessibility features.
- Third-party testing system – an independent body tests products for compliance, which in turn generates a recognised 'seal' of approval.

The above can be placed on a scale somewhere between 'laissez faire' to strong government intervention. Yamada goes on to suggest steps to establish a management context in which accessibility is administered.

- Accessibility management system standard – the company institutes a management regime that is independently assessed (along the lines of ISO 9000 standards) and recognised for their:
    - ability to develop accessible products
    - involvement of end-users during the design phase
    - response to complaints and feedback from users
    - record keeping.
- Top management's declaration of accessibility policy – managers make a personal and public declaration to support the development of accessible features in their products

Thoren (2007) agrees with Yamada that the process of mainstreaming accessibility in public procurement is broader than a technical exercise in standards-setting. He states that mainstreaming of ICT accessibility must include business processes and ongoing management of ICTs within the organisation. It is interesting to note that Sweden's use of 'framework agreements' in their procurement system resonates with many of these ideas (see Section 2.6.29). They look to the broader capabilities of businesses to understand and respond to accessibility requirements. This is important when suppliers must make judgements about areas of a solution that may be underspecified which, in turn, can lead to missed opportunities to develop optimal solutions.

Given a global market, the commercial impetus for innovation in accessible ICTs will increase significantly if global accessibility standards are agreed upon. Such a development may lead to less complexity for countries like Australia if the hard work of standards setting occurs elsewhere. In being able to piggyback on the efforts of places such as the United States, Japan or the EU, the economies of scale and improved knowledge development that is enjoyed there will be extended to Australia should it choose to adopt such standards.

3.8.3.   Monitoring and compliance: Are 'sticks' preferable to 'carrots'?

Having discussed the potential benefits that flow from the application of accessibility criteria, the complementary issues of monitoring and compliance are now analysed. The benchmarking exercise of grouping countries on the basis of their use of ICT accessibility criteria in public procurement law found that only a minority of countries make compliance of accessibility criteria in their public procurement regulations mandatory. The case studies reveal that a diversity of approaches that encourage compliance through voluntary measures supported by access to information resources have been used in preference to mandatory methods that rely on sanctions. These two approaches are described figuratively as 'carrots' and 'sticks'. Described more formally as a tension between 'market-led' approaches versus regulatory approaches, the research finds that they are not opposite ends of a continuum – either or both can be applied to encourage compliance.

The review of cases suggests that neither approach on its own is guaranteed to lead to complete success. Even in the USA, which has a compliance regime that is backed up with fines and criminal sanctions, cannot boast that this has led to universal compliance by manufacturers or federal agencies. The process by which legal action can be brought against alleged breaches is onerous, particularly for individuals. There is also a level of complexity to the application of accessibility criteria that makes the determination of compliance difficult.

As already discussed, a less stringent set of requirements described by web accessibility guidelines (i.e. WCAG 1.0 and 2.0) does not necessarily translate into high levels of compliance. Invariably, the research indicates that poor compliance can be associated with light-touch schemes that rely on the voluntary cooperation of agencies. Even in cases where such guidelines were stated as mandatory, such as Ireland, the absence of a reliable monitoring system, or tangible sanctions for non-compliance, effectively undermined this obligation.

Even though there has been disappointing responses to these incentives, the work of various agencies to develop tool kits, build educational resources, and stage conferences to publicise current research has been of significant value in advancing learning and conceptual developments in accessible ICTs. The work of Ireland's Centre of Excellence on Universal Design (CEUD) is a good example of this where they have been establishing important milestones in improving the profile of education and research in this area. Given the ubiquity of the Internet, the work of the CEUD and other such agencies around the world is available at low cost thereby making it possible for anyone who has an interest in this area to become better informed and better engaged with international efforts to promote the need for accessible ICTs.

Therefore, a combination of both 'carrots' and 'sticks' appears to be necessary to encourage compliance with ICT accessibility criteria. Carrots are required to facilitate learning of accessibility concepts. The time appears ripe for ICT accessibility criteria to move from the margins of concern to centre-stage and this requires a commitment by all stakeholders to become better informed and share their knowledge about ICT accessibility criteria.

However, in order to achieve greater commitment to mainstreaming, stronger measures in the form of mandatory requirements for ICT accessibility criteria appear necessary. Many governments have set for themselves a relatively low bar of web accessibility; and even that has proved a challenge. While this may allude to the complexity of accessibility criteria it also may reflect poorly on their commitments to address issues of discrimination in their communities. There is a case for applying some stronger measures to independently monitor compliance and to apply sanctions when compliance has not been achieved.

3.9. Conclusion

In this chapter a number of exemplar cases were detailed so that readers could gain an appreciation of the breadth and depth of issues that relate to the topic of accessible ICTs in public procurement. The standards development work in the USA, Japan and Europe brings closer the prospect of global standards in accessible ICTs. This may not only prove to be of benefit to people with disabilities who travel and work across national borders but it could facilitate the passage of such standards into public procurement regimes throughout the world to support accessibility innovation by major corporations. However, the challenges that each country faces will be different and, accordingly, the mechanisms that enable ICT accessibility criteria to be implemented will need to take account of local factors. In seeking to provide guidance to Australia it is first necessary to take account of conditions that exist within the Australian context. Accordingly, the next chapter investigates ICT accessibility criteria within public procurement in Australia.

3. Public ICT Procurement Policy in Australia

4.1. Introduction

This investigation of Australia's public procurement regime with a special focus on the purchase of ICTs enables readers to learn more about public procurement as it applies to Australia. Public procurement, as a financial process of government, is shaped significantly by the need for efficiency, the risk from unforeseen circumstances and the requirement for transparency in order to build public confidence in the procurement process. These are illustrated in this review of Australia. The extent to which the procurement processes include criteria for the purchase of accessible ICTs is naturally of prime interest.

This chapter describes the Australian Government Information Management Office (AGIMO) as an important actor in the procurement of ICTs for government and as a potential facilitator of a transition to greater accessibility in ICTs. AGIMO has been central to improving accessibility of public websites through a government-wide program to implement WCAG 2.0.

Finally, the chapter provides the opportunity to present focus group findings.

4.2.   Public procurement in Australia

Procurement policies in Australia sit within a broader framework of financial management legislation. In the federal sphere, the governing legislation for public procurement is the Financial Management and Accountability Act 1997 (FMA Act).[49] These policies generally aim to promote greatest value in the supply of goods and services to government through the promotion of competition in an equitable and transparent way. The system of financial management that governs public procurement in Australia's national government is illustrated in Figure 4.1.

The overriding feature of procurement practice at the Federal level is 'value for money'. The Commonwealth Procurement Guidelines (CPGs) define value for money in terms of the 'relative costs and benefits over the whole procurement cycle' (Dept of Finance and Deregulation, 2008, p. 10). In seeking to achieve value for money, the Federal Government includes other related goals when procuring goods and services:

- encouraging competition by ensuring non-discrimination in procurement and using competitive procurement procedures
- promoting the use of resources in an efficient, effective and ethical manner
- making decisions in a transparent and accountable manner.

In this context, the meaning of the word 'discrimination' refers to ensuring suppliers of Government goods and services are treated equally rather than the meaning informed by the Human Rights Commission where discrimination on the basis of disability, sex or race is central.

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49 See http://www.finance.gov.au/financial-framework/fma-legislation/fma-act.html. Retrieved 11 October 2011

Figure 4.1 Governance structure of public procurement process within the Commonwealth Government of Australia (Dept of Finance and Deregulation, 2008)

Another important feature of striving to attain value for money is the 'whole-of-life' concept where costs are considered in tandem with other factors over the whole life of an asset. The guidelines state:

Whole-of-life value for money assessment would include consideration of factors such as:

- *fitness for purpose;*
- *the performance history of each prospective supplier;*
- *the relative risk of each proposal;*
- *the flexibility to adapt to possible change over the lifecycle of the property or service;*
- *financial considerations including all relevant direct and indirect benefits and costs over the whole procurement cycle; and*
- *the evaluation of contract options* (Dept of Finance and Deregulation, 2008, p. 6)*.*

The process of procurement is inherently risky for both procurers and suppliers and it is for this reason that the Department has developed a detailed risk analysis plan that seeks to mitigate risks at every stage of the procurement process from initial planning, implementation, and relationships between suppliers and government entities to termination of the project (See Figure 4.2).
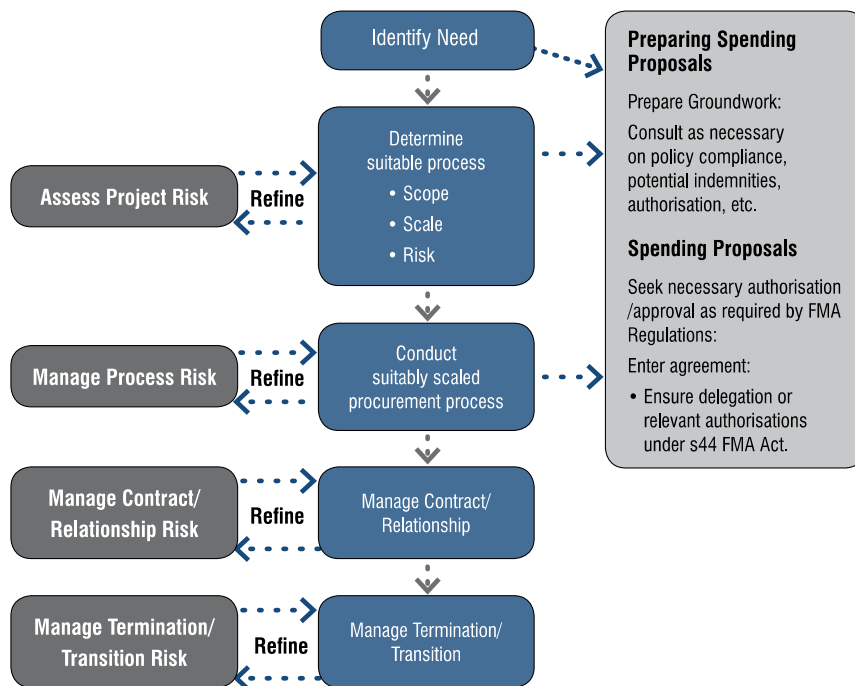
Figure 4.2 Managing risk through the full cycle of goods and services procurement *(Dept of Finance and Deregulation, 2008)*

Considerable work has gone into streamlining procurement procedures in ways that enable more efficient interaction with industry. For example, there is recognition of the limited resources of small to medium enterprises (SMEs) where steps have been taken to improve access to the procurement process.

Australia is governed by three levels of government; each of which has public procurement processes. Due to Australia's historical development, federal and state jurisdictions enjoy a significant degree of autonomy. Despite this, procurement policies in the states and territories are consistent with those in operation at the Federal level. The overriding feature of procurement practice at the Federal level of value-for-money is evident in all the procurement policies of the states and territories. For example, purchasing policy in the state of Queensland highlights "value for money and probity and accountability for outcomes" as the primary goals it seeks to achieve when procuring goods and service (Queensland Government, 2007, p. 5).

4.3. Public procurement of ICTs and accessibility

As part of the systematic analysis of Australia's public procurement regime, procurement policies from the Federal Government and state and territory governments were investigated to discover if any of their procurement regulations included ICT accessibility criteria. The report writers used a list of accessibility terms to search related websites and documents (see Table 4.).

Table 4.2 Search terms used to extract references to ICT accessibility requirements in government procurement guidelines

accessibility	mobility
access	vision
assistive technology	hearing
assist	public procurement
special needs	employment
Section 508	disabilities
disability	inclusion
disable	

The summarised results of this investigation are contained in Table 0.4. No evidence pertaining to ICT accessibility criteria was found.

In the Federal domain the procurement of ICTs is primarily the responsibility of the Australian Government Information Management Office (AGIMO), a section within the Department of Finance. The procurement of ICTs has come under increased scrutiny as part of a strategy to better coordinate the ICT needs of Federal public agencies with local industry. Since 2008, two ICT-focused inquiries have taken place. The first inquiry, *Review of the Australian Government's Use of Information and Communication Technology*, by Sir Peter Gershon found that weak governance of ICT use in government was leading to missed opportunities in better service delivery by government and inefficiencies in the way funds were expended. The second inquiry, called *Strategic Vision for the Australian Government's use of ICT* sought to build on Gershon's work by embedding the management of ICTs into delivering a government's strategic vision of improved public sector productivity (p. 5). The report highlighted the rapid pace of change in the ICT landscape and the risks associated with ICT investment decisions made in isolation from other sections of government (p. 7).

The work that has been undertaken to better optimise the purchase of ICTs by the Australian government includes the establishment of nine procurement panels.[50] These include panels for suppliers of software, desktops, telecommunications and the Internet. In line with the need to increase value for money, these panels are designed to reduce duplication, increase economies of scale and reduce costs.

Accessibility criteria could have been one determinant for the selection of these procurement panels. However, information from AGIMO representatives in response to questions from this research indicated that accessibility criteria were not an area of active consideration. The ICT criteria for procurement panels are compiled by AGIMO in response to the requirements of departments consistent with government policy. On occasions, external consultants are used in the determination of criteria.

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[50] See AGIMO webpage on ICT procurement at http://www.finance.gov.au/procurement/ict-procurement/index.html Retrieved 1 April 2012.

Table 0.4 Summary of accessibility inclusions in the Federal and state government's procurement publications

State	ICT Procurement Policy	Website related to ICT procurement policies	Accessibility related information
Federal government	Department of Finance	Commonwealth Procurement Guidelines http://www.finance.gov.au/procurement/procurement-policy-and-guidance/CPG/index.html	No specific information about accessibility criteria in purchasing guide. Accessibility issues framed by the need to promote the participation of organisations that employ people with disabilities as well as indigenous SMEs in government procurement.
Western Australia	The Department of Treasury and Finance oversees the ICT procurement process	http://www.treasury.wa.gov.au/cms/content.aspx?id=1986&terms=procurement (Accessed July 28 2011)	No specific information about accessibility criteria in purchasing guide
Northern Territory	NT government oversees the ICT procurement process	http://www.nt.gov.au/dbe/procurement_policy/index.html (procurement web site) http://notes.nt.gov.au/Tender.nsf/Main?OpenForm&ETL (lodgement) (Accessed July 28 2011)	There are no details related to accessibility criteria in procurement policy website
Queensland	The Department of Public Works oversees the ICT procurement process	http://www.publicworks.qld.gov.au http://www.qgcio.qld.gov.au/SiteCollectionDocuments/Architecture%20and%20Standards/Information%20Standards/Toolbox/ICT%20Procurement/Guidelines/is13bpg.pdf (Best practice guide for ICT purchasing) http://qprocurement.com.au/links.html (Accessed July 28 2011)	There are no details related to accessibility criteria in procurement policy website
South Australia	State Procurement Board oversees the ICT procurement process	http://www.spb.sa.gov.au/site/home.aspx (Accessed July 28 2011)	No specific information about accessibility criteria in purchasing guide
New South Wales	The Department of Finance and Services oversees the ICT procurement process	http://www.nswprocurement.com.au/policies.aspx (Accessed July 28 2011)	The website has information about procurement policies for ICT but does not have specific details about accessibility criteria
Australian Capital Territory	Treasury oversees the ICT procurement process	http://www.procurement.act.gov.au/ (Accessed July 28 2011)	No specific information about accessibility criteria in purchasing guide
Victoria	The Victorian Government Purchasing Board oversees the ICT procurement process	http://www.egov.vic.gov.au/victorian-government-resources/policies-victoria/ict-policies-victoria/ict-procurement-policy-standard-and-guidelines.html (Accessed July 28 2011)	The website has information about procurement policies for ICT but does not have specific details about accessibility criteria
Tasmania	Department of Treasury and Finance	http://www.purchasing.tas.gov.au/ (Accessed July 28 2011)	The website has information about procurement policies for ICT but does not have specific details about accessibility criteria

The European Commission's study into eAccessibility confirms Australia is lagging behind when compared to other countries' implementation of accessibility criteria in their public procurement regimes (EU, 2011e, pp. 179-180).

In commenting on Australia's public procurement regime, Human Rights Commissioner, Graeme Innes (2007) reasons that the absence of accessible ICT requirements in public procurement undermines the goal of value-for-money.

> *If the purpose of public procurement is to provide for provision of services to the public – inherently including people with disability – or to support the work of public sector employees – again, including people who either have now or might at any time acquire a disability – then it seems clear to me that equipment or premises or facilities which are not accessible to or usable by people with disability are not fit for purpose, to put it in consumer affairs terms.*
> *To put it in terms more familiar in a procurement environment, failure to address accessibility issues in public procurement involves failure to secure the value for money, which is a central requirement of procurement policy.*

Isolated cases within Australian governments can be found that reveal the benefits of a pro-active policy in accessible ICTs. For example, public service staff in the ACT Government are able to obtain a copy of the voice recognition software Dragon Dictate from a central software repository using a 'drag and drop' function (Le Couteur, 2011). In addition to this, photocopiers with accessibility features are provided. These initiatives were motivated not only by a commitment to reduce barriers for employees with disabilities in the ACT Public Service, but to make available new functions that able-bodied people can take advantage of as well.

4.3.1.   Web accessibility initiatives

In Australia, mandatory web accessibility criteria have been introduced separately to mainstream procurement processes under the Financial Management and Accountability Act 1997. The Web Accessibility National Transition Strategy requires Federal Government websites to conform to the requirements of WCAG 2.0. The timetable has been set for level A compliance by the end of 2012 and level AA by the end of 2014.[51] A separate project within AGIMO is devoted to encouraging federal government agencies to make documents that use Portable Document Format (PDF) accessible to screen reading software.[52]

While not part of an overall public procurement strategy, AGIMO's work in developing accessible websites stands out for the detailed nature of advice to potential suppliers of websites to government agencies. The Web Accessibility National Transition Strategy (NTS) is backed by the extensive information provided in WCAG 2.0 guidelines. AGIMO has the authority to stipulate compliance by all agencies under the Financial Management and Accountability Act 1997. Agencies covered by this strategy will be required to report, through Finance, to Secretaries' ICT Governance Board (SIGB) and the Online and Communications Council (OCC) on a regular basis on their progress to WCAG 2.0 conformance in line with the NTS timetable.[53] The consequences of failing to adhere to

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[51] For further information about AGIMO's work in web accessibility go to
http://www.finance.gov.au/publications/wcag-2-implementation/index.html
[52]   For further information about AGIMO's work in making PDF documents accessible to screen readers see
http://www.finance.gov.au/publications/wcag-2-implementation/index.html.
53 See http://webguide.gov.au/accessibility-usability/accessibility/Retrieved 18 February 2012

this timetable are not immediately clear. Agencies that cannot meet the NTS timetable are required to advise the Expenditure Review Committee (ERC) and acquaint themselves with the Disability Discrimination Act and Australia's commitments to the UNCRPD to ensure that their alternative arrangements conform to these obligations.[54]

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. Web accessibility guidelines apply to just a limited subset of software that Australian government agencies use for websites.

4.4.   Focus group perspectives

From the perspective of focus group participants, current policies have had an impact on their ability to perform at work to a satisfying level.[55] 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.*

These comments, when set against the backdrop of declining employment of people with disabilities in the Australian Public Service (see Section 1.1.4), suggest that accessibility of ICTs is a significant issue.

Other stories from participants were consistent with this theme. One person was surprised to find out that there was a departmental policy that disallows access to the free program 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 Dragon Dictate because there were issues that were related to the software's need to traverse the departmental firewall.

The latter example suggests that there has been some breakdown in systems of IT 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 specialised technologies for people with disabilities.

According to the experience of another focus group participant, smaller government departments are not equipped to address the needs of their employees with disabilities. Having worked in a number of Federal agencies this person claimed deficiencies existed in these agencies in assessing the needs of individuals and properly accessing the services provided by JobAccess.[56] Another participant related an experience where there was even confusion between occupational health and safety and workplace modification.

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[54] www.finance.gov.au/publications/wcag-2-implementation/scope.html
[55] For a full description of the focus group findings see the Appendix.
[56] The JobAccess website, the government agency responsible for workplace modifications, can be found at http://jobaccess.gov.au/Home/Home.aspx Retrieved 18 May 2012.

There was a consensus among participants that the support from disability employment services is crucial if accessibility is to be successfully implemented for employees. A disability employment service within a disability service provider such as for deaf or blind people tended to be more knowledgeable and supportive than general disability service providers who may not even have physically accessible premises and no knowledge of specific products that a person might need in the workplace.

While the process of obtaining workplace modifications has improved considerably over the past few years, there are still considerable 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.

The suggestion by one focus group participant that public procurement processes adopt universal design principles was supported by others. Government software does not incorporate accessibility in, for example, HR systems. He reasons that

> *while the cost of retrofitting for small agencies is prohibitive, it would save millions and millions of dollars for one single software system [to be developed across Government] that can incorporate accessibility.*

In summary, the focus group outcomes indicate that attention is required in:

- basic technical knowledge such as enabling assistive technologies to traverse company firewalls
- more flexible IT governance policies allowing usually blocked applications such as Skype to be available for approved staff
- understand what constitutes discrimination and how technology affects it.

From the collective experience of these participants, the logical next step is the implementation of ICT accessibility criteria in public procurement. This would most noticeably force changes in knowledge and expertise development in a range of areas such as ICT support and disability liaison areas.

4.5. Discussion

The benchmarking exercise detailed in Chapter 1.1 summarises Australia's position among OECD countries as one in which web accessibility has been embraced though its adoption of WCAG 2.0 standards for government websites but is found to be grouped with a minority of countries that do not recognise the need for ICT accessibility criteria in public procurement law (see Table 2.1). As a consequence there is little encouragement for government departments to consider ICT accessibility criteria when purchasing ICTs.

In days gone by, Government procurers were reminded of the need to consider the Disability Discrimination Act when procuring goods and services. Prior to 2005, the 'Commonwealth Procurement Guidelines' contained the following advice that:

purchasing specifications and contract requirements for the purchase of goods and services are consistent with the requirements of the Disability Discrimination Act 1992 (p. 11) (cited in TEDICORE, 2005)

As noted in TEDICORE's (2005) submission to the then Human Rights and Equal Opportunity Commission *WorkAbility Report* (HREOC, 2005), references to the Disability Discrimination Act were removed in the 2005 re-draft of the guidelines.

It is feasible that this absence of focus on accessible ICTs has led to insufficient opportunities for ICT support staff and disability liaison officers to gain experience with accessible ICTs. This, in turn, may lie at the heart of complaints that emerged from focus group discussions. Following this train of thought leads one to see how less overt, but systemic, forms of discrimination against people with disabilities can occur. The claim by some focus group participants that unnecessary technology hurdles exist for people with disabilities when they begin employment is consistent with inadequate knowledge of accessible ICTs. This is something that federal employees in the United States need not challenge because laws and standards are in place that guarantees accessible ICTs as a matter of course.

More recently, the issue of ICT accessibility has been given renewed attention in the Federal Government's National Disability Strategy (NDS) (Council of Australian Governments, 2011). The first section of the NDS relates to inclusive and accessible communities. There are three statements and suggested actions that are relevant to public procurement. These are:

- *Policy direction 5: Communication and information systems that are accessible, reliable and responsive to the needs of people with disability, their families and carers.*
- *Universal Design: The principles of universal design can also be applied to the design of programs run by government, businesses and non-government organisations. This results in greater efficiency by maximising the number of people who can use and access a program without the need for costly add-ons or specialised assistance.*
- *Areas for future action: 1.7 Promote universal design principles in procurement.*

This indicates recognition by Government of the need to take action to ensure that people with disabilities gain better access to ICTs and to use procurement as one way of achieving it.

Achievements in the area of ICT accessibility will better address Australia's obligations under the UNCRPD (see Section 1.1.4). This is the view of civil society groups representing the interests of a broad range of disability advocacy, and legal and human rights organisations in Australia (Australian Civil Society, 2012). The report recommends that the "National Disability Strategy incorporates measures to address the full range of accessibility obligations under CRPD Article 9" (p.55).

4.6.   Conclusion

It can be seen that Australia lags behind many countries in the world in relation to the application of ICT accessibility criteria in public procurement processes. From the perspective of focus group participants, this is consistent with their experience where insufficient attention has been given to ICTs to best address the needs of people with disabilities when they come to work for the Federal Government. On the basis of findings from the research outlined in Chapters 2 and 3, the following chapter explores the potential of incorporating ICT accessibility criteria within Australia's public procurement processes.

4. Applying the Research to Australia

5.1.   Introduction

Armed with the collective findings of the benchmarking exercise and in-depth cases, the report moves on to consider the findings from the Australian case. Australia's position as an advanced economy that is heavily reliant on the import of ICTs is well recognised. Can Australia allow the market to decide whether to include accessibility features in ICTs or should it seek to influence the market to make available ICTs with a broad range of accessibility features?

The findings indicate that the barriers to achieving equitable access to ICTs and the opportunities that accompany it represent a classic example of market failure (see Section 1.1.3). However, solutions to this case of market failure can be justified on both social and economic grounds.

5.2.   The benefits of ICT accessibility criteria to Australia

The digital divide is more pronounced for people with disabilities (see Section 1.1.1). The source of many of the disparities described by the digital divide can be found in socio-economic factors that systematically make access to information and ICTs more difficult for people with disabilities. Waddell (2010) identifies a lack of accessible ICTs as one such barrier. She likens the absence of accessible ICTs to a form of discrimination that qualifies it for action under anti-discrimination provisions such as the UNCRPD.

The UNCRPD specifies that persons with disabilities have an equitable right to fully participate in all opportunities that society offers. ICTs can mediate access to many of these opportunities (see Section 1.1.4). As a signatory to the UNCRPD, Australians with disabilities, as a fundamental right, are entitled to equitable access to information, employment and accessibility to ICTs. Therefore, one reason why Australian governments should seek to play an explicit role in making available accessible ICTs is that it represents a tangible sign of its commitment to the UNCRPD.

The potential for accessible ICT to open up opportunities for people with disabilities in relation to employment represents another benefit that is available. It is a justifiable win-win assertion that greater availability of accessible ICTs enables people with disabilities to participate more equitably in employment, which, in turn, has benefits to the broader economy. Innes (2011) argues that opportunities for greater levels of labour productivity are being overlooked when people with disabilities who wish to work cannot do so because of failures to address the issue of ICT accessibility. Focus group participants in this research were unanimous in their desire to address technological impediments that frustrate transition to employment and their performance at work once employed. The significance of this issue is set against the declining numbers of people with disabilities employed in the Australian Public Service (see Section 1.1.4).

The final reason why the topic of ICT accessibility should be of interest to Australia is that the mainstreaming of ICT accessibility into organisations represents a potentially transformative step. The central message of the latest research from the UK is that providing accessible ICTs to all is fundamental to an organisation's core business objectives. As the focus of attention moves to the skills and knowledge that staff bring to their work, the ability of the organisation to tailor ICTs becomes central to growing productivity. Disability is no longer viewed through the prism of what Waddell (2010) describes as the "medical model" but one that focuses on the incompatibilities in the environment which prevent people from fully expressing their ability. Evidence of this change of

mindset can be seen in the way some organisations in the UK have mainstreamed ICT accessibility by establishing committees that are given the authority to assess the ongoing needs of staff and to make purchasing decisions that reflect the individuality of staff members rather than the 'one-size-fits-all' approach from the past.

In summary, the adoption of mandatory accessibility criteria for ICTs reflects a positive endorsement of all individuals' right to make worthwhile contributions, given the appropriate tools, not only to the organisation but also to society as a whole. Making accessible ICTs widely available is an example of the 'out-of-the-box' thinking that has the potential to establish a new context for interaction with people with disabilities and remove one significant and systemic form of discrimination that has limited the opportunities of people with disabilities to fully participate in the social and economic life of our community.

5.3.   Are mandatory ICT accessibility criteria the best course of action?

Even though some may accept the need for greater availability of accessible ICTs, is mandatory ICT accessibility criteria in public procurement the best avenue to address this need? There are a number of reasons that support the inclusion of mandatory ICT accessibility criteria in public procurement.

Firstly it is necessary to explain why the report writers have not recommended a 'laissez faire' approach in seeking to make accessible ICTs more available (namely, the 'self-declaration' options from Yamada's model outlined in Section 1). A laissez faire approach assumes that 'buyers' and 'sellers' are largely informed about pertinent issues. As argued previously, this is far from the case when it comes to the state of knowledge of accessible ICT products in Australia.

Self-regulatory processes in European countries have not had an impact on improving accessibility to ICT products (EU, 2011c). That is the prime reason that the European Commission is working toward the adoption of accessibility legislation that will make the incorporation of ICT accessibility criteria (based on European standards) mandatory in public procurement. This will potentially have an important impact on OECD countries, many located in Europe that are committed but have not acted yet. In other words, most European countries will, if the legislation is passed, have mandatory inclusion of accessibility criteria in public procurement.

The basic rationale for introducing mandatory accessibility criteria into the public procurement of ICTs centres on the bargaining power of governments (Yamada, 2007a). Given the limited options that the Australian Government has in influencing the innovation of foreign manufacturers, public procurement represents the most logical choice. As manufacturers respond to the demand from Government, the price of accessible ICTs is reasoned to fall thereby increasing affordability to the general community through lower prices. While this reasoning intuitively makes sense, it is also supported by innovation theory (see Section 1.1.3).

The increased demand from Government will not only influence manufacturers but also a range of complementary activities in the economy. Prime among these, and relevant to the needs of many focus group participants, is the development of technical expertise in the installation and maintenance of accessible ICTs and assistive technologies. If commercial software packages have accessibility features, these should be used and certainly not disabled. Similarly, network systems should work seamlessly with well-known software such as JAWS and Dragon Dictate. Ensuring compatibility should not be the job of the end-user with disabilities but rather the combined expertise of the supplier and the IT support staff. This whole process can be optimally achieved through the application of mandatory accessibility criteria in public procurement.

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, firm direction from governments in Australia will similarly provide strong incentives that encourage training organisations to provide tuition in ICT accessibility and universal design.

Given a global market, the commercial impetus for innovation in accessible ICTs will increase significantly if global accessibility standards are agreed upon. Such a development may lead to less complexity for places like Australia, which does not have a strong background in ICT manufacturing and has a relatively small population base. In being able to piggyback on the efforts of countries such as the United States, Japan or in the EU, economies of scale and improved knowledge development will be extended to places such as Australia. The only way that this outcome can be guaranteed is if Australia adopts the inclusion of 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. Without specific regulations, it may be difficult to deny entry to ICTs with limited or no accessibility features.

Mandatory accessibility criteria in public procurement of ICTs also strengthen the government's commitment to current and prospective employees in the public service. In line with the experience from the UK, the mainstreaming of ICT accessibility criteria not only provides a positive impetus for people with disabilities but also signals a commitment to all staff. Given the role that the Federal Government plays as an employer, 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.

Finally, the benefits that flow from the public procurement of accessible ICTs are not limited to those people with disabilities but are generally found to be of benefit to the wider community. The ability to easily zoom text to facilitate readability is a feature that is gaining popularity in the broader community. The popularity of dictation software increases as people find that the accuracy of these programs is better than their typing skills. In one anecdote, the need for the re-design of office space has been mooted to facilitate dictation to desktop computers; such is the enthusiasm for this new software that was originally intended for people with physical disabilities.

5.4.   The way forward

Given the need for action in Australia to make accessibility criteria a more potent force for equality for people with disabilities, what options for action exist?

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 sizeable trade deficit in ICT) 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.

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.

Ignorance of accessible products and their potential was one overwhelming finding of the research and this situation is not going to change quickly without a concerted effort to better educate a range of stakeholders: designers, vendors, government purchasing officers, IT support staff and people with disabilities. 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, firm direction from the Federal Government in Australia will similarly provide strong incentives that encourage individuals and organisations to learn about ICT accessibility to reduce this bottleneck.

Disability advocacy groups need to play an integral role in promulgating ICT accessibility criteria to the broader community. Such organisations have a critically important responsibility in educating their respective members about the potential of accessible ICTs. With an informed membership, scrutiny of governments at all levels in Australia as they address accessibility criteria in ICTs will increase. With a more informed community, breaches will be identified more readily thereby placing pressure on the public and private sectors to maintain higher standards of accessibility in ICTs. Given the incentives to increase availability of accessible ICT generally and to increase employment opportunities, representatives from various advocacy groups are seen to be integral to developing a coordinated plan to advocate for the introduction of accessibility criteria into public procurement.

Another group that is critical to making accessible products readily available to the community are manufacturers and their vendors. Consistent and uniform accessibility criteria will provide greater certainty for vendors and manufacturers to invest and compete thereby creating a more viable commercial context for the supply of accessible ICTs. This issue was discussed in Section 1 where Yamada's (2007) proposed arrangements for an independent third-party testing regime were considered.

The research indicates that an innovative compliance regime is needed that draws on a judicious mix of 'carrots' and 'sticks' to address the complexity of accessibility criteria. There are recognised challenges for:

- Manufacturers and vendors developing innovative responses that address accessibility criteria
- Government in developing an appropriate context such as a reliable system of monitoring compliance with accessibility criteria as well as setting appropriate sanctions for non-compliance
- Standards setting bodies as they seek to codify standards changes in an efficient and timely manner.
- The community, particularly people with disabilities, who have a significant role as experts in identifying areas for improvement in the accessibility of ICTs.

The greatest immediate need in facilitating the adoption of mandatory ICT accessibility criteria is education. The pace by which this bottleneck can be addressed is governed by the ability of, and incentives for, individuals both lay and professional to absorb new knowledge. By way of example, the individuals and various professions include: ICT developers and web designers, government procurement officers, technical support staff, disability rights organisations and people with disabilities.

5.5. Recommendations

The recommendations of this report are based on the findings of the research and present a way forward for Australia.

The report will assist representatives from disability organisations to build their knowledge around the sometimes esoteric and complex world of government ICT purchasing and the incorporation of accessibility criteria. It serves as an important evidence base when advocating for change. The advocacy toolkit will provide key arguments and ideas that can be used by disability organisations to build their case based on their own needs. ACCAN and other consumer organisations may incorporate this into a coordinated action plan for disability advocates.

The recommendations are divided into short-term (within one year), medium-term (two to four years) and long-term (four to six years). Naturally, this does not mean that advocacy and planning could not commence on the long-term recommendations at an earlier stage.

5.5.1.   Short-term

Advocacy groups representing the interest of people with disabilities will play a critically important role in driving the success of the introduction of accessibility criteria in public procurement. In order to develop an effective balance between 'carrots' and 'sticks', knowledgeable representatives from constituencies within the disability movement will be needed to provide expert advice on the efficacy of accessibility criteria as well as to report on perceived breaches of ICT accessibility requirements in the future.

However, disability representatives need to build knowledge of public procurement and its potential effects on increasing accessibility to ICT. ACCAN can play a crucial role in bringing together disability representatives to build this understanding. As well, ACCAN is in a prime position to organise a roundtable of key stakeholders across government, industry and the disability sector to engage and share ideas. This is an important first step to establish a dialogue so that consumer advocates and the disability sector can work together with government and industry to advance this policy.

- Recommendation 1 Representatives from disability groups work to promote understanding of accessibility issues in ICTs in relation to public procurement. To support that work, ACCAN be requested to initiate a workshop of key consumer and disability advocates.

- Recommendation 2 A roundtable be organised of key stakeholders from government, industry and the disability sector to discuss the issue of ICT accessibility criteria for public procurement in Australia. Key stakeholders are Department of Finance and its Australian Government Information Management Office (AGIMO), Australian Human Rights Commission, Australian Public Service Commission and ACCAN.

Some parts of industry and government believe that the costs associated with the supply of products that meet accessibility criteria would impose too heavy a burden on industry. This is not necessarily borne out when it is recognised by multinational corporations that a number of major government markets already require accessibility features in the ICT products they purchase. However, it is important that the Australian market is analysed thoroughly through a cost-benefit study. The Productivity Commission is best placed to undertake such a study.

- Recommendation 3 Disability representatives use the Advocacy Toolkit to encourage local, state and Federal politicians to lobby for public procurement of accessible ICTs and for the Productivity Commission to undertake a cost-benefit study on the incorporation of accessibility criteria in ICT public procurement.

During the research, it was obvious that while a considerable amount of information on the topic was found, it was not straightforward to obtain. There is a growing trend internationally to develop accessibility criteria in public procurement. This is especially the case in Europe as the work of Mandate 376 nears completion. Also, once the Refresh of Section 508 in the USA is complete, there is likely to be new methods used to address ICT accessibility. Therefore, it would be valuable to have an online resource to share the latest international developments.

- Recommendation 4 An online resource be established to promote information sharing about the latest international developments of accessibility criteria in ICT public procurement.

5.5.2.   Medium-term

Disability representatives are faced with having to cope with technical and legalistic material in their advocacy work. It is important that disability representatives be an integral part of the processes to establish accessibility criteria in public procurement. There are a limited number of disability representatives with this type of expertise and the demand on their time, often voluntary, is large. A training and mentoring program to build and broaden their knowledge and skills base will make a marked difference.

- Recommendation 5 Disability and consumer advocacy groups consider options for developing training programs to build and broaden the knowledge and skills base of disability advocates when representing their constituents on technical committees such as for development of accessibility guidelines in public procurement. Government funding be made available to support these programs.

Software developers, vendors and IT support staff need to be encouraged to acquire knowledge of accessibility as it relates to technical criteria for ICT. This can be achieved by identifying accessibility as a defined area of expertise that is worthy of recognition within educational programs as well as for corporate and government testing regimes for ICTs and professional accreditation.

There are established testing regimes for ICTs used by industry and government[57] but currently accessibility does not seem to be included. This leads to difficulties in incorporating assistive technology into corporate networks as raised by focus group participants. The two lead professional organisations in Australia that can facilitate better education in ICT accessibility principles are the Australian Computer Society (ACS) and the Institute of Electrical and Electronic Engineers (IEEE), the latter having connections with the global resources of the IEEE which is based in the United States. In the non-government sector, the Australian Chapter of the Internet Society is a well-connected source of expertise.

Looking at the training of young ICT professionals, the inclusion of accessibility-related concepts in web design and interactive media courses in University and TAFE courses will be of ongoing and significant benefit.[58]

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[57] As discussed in Section 4.4, one example of this is ITIL (Information Technology Infrastructure Library). See http://www.itil-officialsite.com/home/home.aspx Retrieved 5 April 2012.
[58] For example, see Web Design and Interactive Media courses at the University of Adelaide (see http://programs.unisa.edu.au/public/pcms/course.aspx?pageid=100366).. There is also a short industry program in partnership with Media Access Australia that is modelled on these courses (see http://www.unisa.edu.au/cil/future/pcwa.asp both websites Retrieved 5 April 2012.)

- Recommendation 6 Recognition be given to expertise in accessibility and universal design by professional bodies such as the Australian Computer Society (ACS) and the Institute of Electrical and Electronic Engineers (IEEE).

- Recommendation 7 University and TAFE courses integrate accessibility and universal design in their teaching of relevant web design and computing courses.

- Recommendation 8 Accessibility criteria and relevant assistive technologies be explicitly recognised in corporate and government ICT testing regimes.

Based on the in-depth case studies for places such as the USA, the province of Ontario and Ireland, it would be optimal if the Australian Government established an independent specialist body to advise, monitor and facilitate the diffusion of general accessibility-related knowledge that includes ICTs. This role would in part address the complex nature of accessibility features in the built and virtual environments and their application to various constituencies as a way of furthering equality. In relation to ICT, part of the body would need to have a technical focus in not only telecommunications and the Internet but also hardware and software for the office environment and have a strong understanding of disability discrimination and human rights.

However, this aim may need to remain as an aspiration until the political and economic apparatus are in place to make this goal possible. Therefore, while not losing sight of the desirability of a future independent body devoted to accessibility, an alternate approach could be to develop a universal design program based on the principles in the National Disability Strategy about universal design and procurement. This program could be administered by the Australian Human Rights Commission and act as an information conduit on accessibility generally and ICT accessibility specifically. The Commission is well placed to take on such a role but will require additional resources to do so effectively.

- Recommendation 9 The Australian Human Rights Commission establish a universal design information program based on specified areas for future action in the Commonwealth Government's National Disability Strategy. The Commission is provided with additional resources to take on this role that includes developing or adapting existing information material to build understanding of ICT accessibility among government departments and industry.

5.5.3.   Long-term

Assuming that the Productivity Commission indicates that there are no cost disadvantages in the incorporation of accessibility criteria in public procurement, it is preferable that industry be given adequate preparation when tendering for supply of ICT products that include accessibility features. Again, there is the need for comprehensive information material for suppliers as well as the development and testing of various processes. As the supplier panels are being assessed for renewal, it is an ideal time for AGIMO to start a pilot project by including voluntary accessibility criteria in tender documentation.

- **Recommendation 10** AGIMO be encouraged to set up a pilot project to incorporate voluntary accessibility criteria (based on accepted international standards) in tender documentation. This can be done to best effect as suppliers on AGIMO's procurement panels renew their supplier status.

- **Recommendation 11** A transparent and reliable monitoring system be established by AGIMO (in association with the Australian Human Rights Commission and with input from the disability

sector) so that the purchase of accessible ICTs in government departments and agencies can be assessed within a set timeframe.

The pilot project should be reviewed two years after commencement. Based on set guidelines, the review will indicate if there have been changes in the purchasing of accessible ICTs. If there is no change, it is a signal that mandatory accessibility criteria are needed. A regulation impact statement by government will give industry the opportunity to consider what this will mean for them. This offers an opportunity for an assessment of what effects mandatory accessibility criteria in government purchasing would have on Australian ICT suppliers. Given the amount of work that has been undertaken overseas on accessibility criteria, it appears prudent to build on such efforts to take advantage of economies of scale.

The research lays out a number of arguments in favour of mandatory accessibility criteria in the public procurement of ICTs that lead to improved equality for people with disabilities. While currently the number of countries that have mandatory accessibility criteria is relatively small, this will increase markedly once Mandate 376's work is completed in Europe.

- **Recommendation 12** The government introduce mandatory accessibility criteria in ICT purchasing if the results of the monitoring system indicates that the introduction of accessible ICTs has not reached an acceptable level.

5.6. Consumer advocacy toolkit

The advocacy toolkit is informed by the research in this report. It aims to present in plain language the key concepts of accessibility criteria in government ICT purchasing. It presents the facts using the evidence base from the research to give impetus to strategies that ACCAN and disability organisations are recommended to take in advocating for change in government ICT purchasing policy.

The toolkit includes the recommendations listed above and provides ideas for moving forward. It recognises that consumer representatives are likely to not have experience in government purchasing policy and no previous interaction with AGIMO or the Department of Finance.

The toolkit gives tips on building knowledge, building the case, and then making the case for incorporating accessibility criteria in government ICT purchasing.

5.7. Further research

In the course of this research there were numerous times in which the researchers felt the need to investigate an issue more thoroughly but, because of limited time and resources, were not able to do so. This section provides examples of such issues.

- Corporate social responsibility (CSR) and public procurement. Public procurement and CSR seem to develop in tandem – this would be an interesting focus in future research as a bridge to the private sector and their procurement practices.

- The need to better integrate the experience of people with disabilities in standards-setting processes. This is an issue that has been raised by disability advocates over many years and is reflected in the literature (Soede, Blijham, & Verdonschot, 2009).

- Online resources – blogs and twitter can bring together key stakeholders about the latest global developments in accessibility criteria. There were a few examples of blogs or websites established with such intentions in mind but for one reason or another, they have fallen into disuse. Information-sharing online about the latest developments is one of the recommendations of this report but the optimal mechanism for successful sharing of information should be found, studied and assessed.

5.8.   Conclusion

The research argues that the introduction of mandatory accessibility criteria in public procurement of ICTs is a potential 'game changer'. Given a stable commercial context in which fulsome commitments are made to ICT accessibility criteria, commercial incentives favour investment in accessible ICTs. Greater availability of accessible ICTs at lower prices will reduce one source of systemic discrimination that people with disabilities experience.

Benefits that flow from the public procurement of accessible ICTs are not limited to persons with disabilities but have been found to be of benefit to the wider community. The mainstreaming of ICT accessibility can lead to a realisation that the ability of all individuals to give their best at work is dependant on the facilities that are available to them. Recognising the individuality of workers presents a challenge to the dominant 'one-size-fits-all approach' to providing ICTs. A commitment to tailor facilities to the needs of all individuals represents the latest thinking that links ICT accessibility to business productivity. Those who are able to grasp the significance of this new concept and apply it successfully stand to gain a significant advantage over those who cannot.

Underpinning the recommendations for the inclusion of mandatory accessibility criteria in the public procurement of ICTs are fundamental principles of equality for people with disabilities. The research has indicated that transformative changes are possible should mandatory accessibility be applied to the purchase of ICTs by government. In adopting such an initiative Australia's ongoing commitment to fulfilling its obligations under the UNCRPD will be strengthened.

References

ACCAN. (2009). *Government Roundtable on Accessibility for People with Disabilities*. Parliament House Canberra, Committee Room 2S3, Canberra: Australian Communications Consumer Action Network. Retrieved 25 October 2011 from http://www.katelundy.com.au/2009/11/25/gov2-0-roundtable-on-accessibility-for-people-with-disabilities/.

Access for All. (2011). *Schweizer Accessibility-Studie 2011: Bestandesaufnahme der Zugänglichkeit bedeutender Schweizer Websites für Menschen mit Behinderungen*. Zurich: Access for All. Retrieved 28 April 2012 from http://www.access-for-all.ch/download/Accessibility_Studie_2011_de_komplett.pdf.

ACS. (2010). *Australian ICT Trade Update 2010*. Centre for Strategic Economic Studies & Australian Computer Society. Retrieved 15 May 2012 from http://www.cfses.com/documents/2010_ICT_Trade_Update.pdf.

ADB/OECD. (2005). *Thematic review of curbing corruption in public procurement*. ADB/OECD Anti-Corruption Initiative for Asia and the Pacific. Retrieved 6 March 2012 from http://www.oecd.org/document/39/0,2340,en_34982156_34982431_35028199_1_1_1_1,00.html.

ADDE. (2012, Summer). Disability Employment - The Issues: So, What is the Real Unemployment Situation? *Australians for Disability and Diversity Employment Newsletter*. Retrieved 26 April 2012 from www.adde.org.au.

Albon, R., & York, R. (2006). Mobile termination: market power, externalities and their policy implications. *Telecommunications Policy, 30*, 368-384.

Andersen, B., Bjørnar, H., & Spielkavik, I. (2008). Benchmarking applications in public sector principal-agent relationships. *Benchmarking: An International Journal, 15*(6), 723-741.

APSC. (2006). *Employment of People with Disability in the APS*. Canberra: Australian Public Service Commission.

APSC. (2010). *Australian Public Service Statistical Bulletin 2009-2010*. Canberra: Australian Public Service. Retrieved 25 October 2011 from www.apsc.gov.au/stateoftheservice/0910/statistics/bulletin.pdf.

Ashington, N. (2009). *Accessible Information and Communication Technologies: Benefits to Business and Society*. United Kingdom: OneVoice for Accessible ICT from http://www.onevoiceict.org/sites/default/files/Accessible%20ICT%20-%20Benefits%20to%20Business%20and%20Society.pdf.

Australian Civil Society. (2012). *Australian Civil Society Shadow and Baseline Report to the UN Committee on the Rights of Persons with Disabilities*. Melbourne: Disability Advocacy Resource Unit. Retrieved 2 June 2012 from http://www.daru.org.au/wp/wp-content/uploads/2012/05/CRPD-Shadow-Report-10-May-2012.doc.

Barbour, R. S., & Kitzinger, J. (Eds.). (2001). *Developing focus group research: politics, theory and practice*. London: SAGE Publications.

Barrere, G. (2010). eAccessibility in web quality process : ReNo. Paper presented at the *4th European eAccessibility Forum*, 12 April 2010, Cité des Sciences et de l'Industrie - Paris, France.

Batusic, M. (2012, 13 April). Guidelines and directives on accessibility [Blog]. Fabasoft AG. Retrieved 6 June 2012 from http://blog.egov-suite.com/2012/04/guidelines-and-directives-on-accessibility/.

Beer, C. (2010). *Charting a path forward: Report of the Independent Review of the Accessibility for Ontarians with Disabilities Act, 2005*. Ontario: Ministry of Community and Social Services, Ontario Government. Retrieved 20 April 2012 from

http://www.mcss.gov.on.ca/documents/en/mcss/accessibility/Charles%20Beer/Charles%20Beer.pdf.

Bianchi, T., & Guidi, V. (2010). *The comparative survy on the national public procurmenet systems across the PPN*. Rome: Authority for the Supervision of Public Contracts, Department for the Co-ordination of European Policies.

Bradley, B. (2009). Accessible Procurement Strategy. Paper presented at the *3rd Access Officer Conference, National Disability Authority*, 3 April 2009, Radisson SAS Hotel, at Dublin. Retrieved 16 February 2012, from http://www.nda.ie/Website/NDA/CntMgmtNew.nsf/0/D2990315EBD8F6038025759300553B1D?OpenDocument.

Campbell, H. (2000). Choosing telecommunications? Consumers in a liberalised privatised telecommunications sector. *Media International Australia, 96*, 59-68.

COAT. (2012). COAT Members Speak at Access Board Hearing to Freshen the Section 508 Refresh [Online News]. Coalition of Organizations for Accessible Technology. Retrieved 20 February 2012 from http://www.coataccess.org/node/10088.

Council of Australian Governments. (2011). *2010-2020 National Disability Strategy: An initiative of the Council of Australian Governments*. Canberra: Council of Australian Governments. Retrieved 22 May 2012 from http://www.coag.gov.au/coag_meeting_outcomes/2011-02-13/docs/national_disability_strategy_2010-2020.pdf.

D'Aubin, A. (2007). Working for Barrier Removal in the ICT Area: Creating a More Accessible and Inclusive Canada. *The Information Society, 23*(3), 193-201.

DCCA. (2004). *Sociale hensyn ved offentlige indkøb - en vejledning i mulighederne for at tage sociale hensyn ved udbud*. Kabenhavn: The Danish Competition and Consumer Authority. Retrieved 22 Febraury 2012 from www.kfst.dk/index.php?id=28299.

DCMS. (2011a). *The e-Accessibility Action Plan: Making Digital Content Accessible By Everyone*. Department of Culture, Media and Sports. Retrieved 9 March 2012 from http://www.culture.gov.uk/images/publications/e-Accessibility-Action-Plan_June2011.pdf.

DCMS. (2011b). *eAccessibility Forum & Action Plan October 2011 Progress Report*. London: Department of Culture Media and Sport. Retrieved 9 March 2012 from http://www.culture.gov.uk/publications/8836.aspx.

Dept of Families, Housing, Community Services and Indigenous Affairs. (2008). *National Mental Health and Disability Employment Strategy: Discussion Paper*. Canberra: Department of Families, Housing, Community Services and Indigenous Affairs. Retrieved 10 October 2011 from http://www.fahcsia.gov.au/sa/disability/pubs/policy/Documents/nds_discussion_paper/default.htm.

Dept of Families Housing Community Services and Indigenous Affairs. (2008). *National Mental Health and Disability Employment Strategy Update: Setting the Direction*. Canberra: Department of Families. Housing, Community Services and Indigenous Affairs. Retrieved 10 October 2011 from http://www.facs.gov.au/sa/disability/pubs/employers/Documents/disAbility_e-news/2009/issue126.htm#4.

Dept of Finance and Deregulation. (2008). *Commonwealth Procurement Guidelines*. Barton, ACT: Department of Finance and Deregulation (Assets Management Group). Retrieved 28 August 2011 from http://www.finance.gov.au/procurement/procurement-policy-and-guidance/CPG/index.html.

Dunlevy, S. (2011, 26 May). Job quotas urged for disabled in public service. *The Australian*. Retrieved 29 September 2011 from http://www.theaustralian.com.au/news/nation/job-quotas-urged-for-disabled-in-public-service/story-e6frg6nf-1226062988124.

Edler, J., & Georghiou, L. (2007). Public procurement and innovation—Resurrecting the demand side. *Research Policy, 36*(7), 949–963.

Edler, J., Ruhland, S., Hafner, S., Rigby, J., Georghiou, L., Hommen, L., et al. (2005). *Innovation and Public Procurement: Issues at Stake*. Germany: Fraunhofer Institute of Systems Innovation Research. Retrieved 15 September 2011 from ftp://ftp.cordis.lu/pub/innovation-policy/studies/executive_summary.pdf.

EHRC. (2011). *Equality Act 2010 Statutory Code of Practice Employment*. London: Equality and Human Rights Commission. Retrieved 29 Febraury 2012 from http://www.equalityhumanrights.com/legal-and-policy/equality-act/equality-act-codes-of-practice/.

ETSI. (2009). *Human Factors (HF); European accessibility requirements for public procurement of products and services in the ICT domain (European Commission Mandate M 376, Phase 1)*. Sophia Antipolis Cedex: European Telecommunications Standards Institute. Retrieved 23 February 2012 from http://portal.etsi.org/stfs/stf_homepages/stf333/tr_102612v010101p.doc

EU. (2005). *Standardisation Mandate to CEN, CENELEC and ETSI in support of European accessibility requirements for public procurement of products and services in the ICT Domain*. Brussels: European Commission Enterprise and Industry Directorate-General. Retrieved 5 April 2012 from http://www.ictsb.org/Working_Groups/DATSCG/Documents/M376.pdf.

EU. (2007). *Learning Examples: Accessible Procurement Toolkits Denmark, Canada and USA*. Hungary: Forum of Hungarian IT Institutions for an Information Society. Retrieved 6 June 2012 from http://einclusion.hu/2007-09-30/accessible-procurement-toolkits-denmark-canada-and-usa-description-and-synopsis/.

EU. (2010a). *Buying Social: A Guide to Taking Account of Social Considerations in Public Procurement*. Luxembourg: European Union, Directorate-General for Employment, Social Affairs and Equal Opportunities. Retrieved 6 June 2012 from http://ec.europa.eu/social/BlobServlet?docId=6457&langId=en.

EU. (2010b). *eInclusion in Luxembourg*. Brussels: Directorate General for the Information Society and Media. Retrieved 20 March 2012 from http://www.epractice.eu/files/eInclusion%20in%20LU%20-%20November%202010-2.0.pdf.

EU. (2010c). *eInclusion in Poland*. Brussel: EU, Directorate General for the Information Society and Media. Retrieved 22 May 2012 from http://www.epractice.eu/files/eInclusion%20in%20PL-December%202010-2%200_0.pdf.

EU. (2010d). *eInclusion in Turkey*. Brussels: Directorate General for the Information Society and Media, European Commission. Retrieved 22 May 2012 from http://www.epractice.eu/files/eInclusion%20in%20TR-September%202010-2.0_0.pdf.

EU. (2011a). Consultation Document: European Accessibility Act [Web page]. Brussels: European Commission. Retrieved 19 January 2012, from http://ec.europa.eu/justice/discrimination/files/2011-12-13_consultation_background_document.pdf

EU. (2011b). *eGovernment in Iceland*. Belgium: Directorate General Informatics and the Directorate General for the Information Society and Media.

EU. (2011c). *European Accessibility Act: legislative initiative to improve accessibility of goods and services in the Internal Market*. Brussels: European Commission, DG Information Society and Media, Unit H.3 'ICT for inclusion'. Retrieved 6 June 2012 from http://ec.europa.eu/governance/impact/planned_ia/docs/2012_just_025_european_accessibiliy_act_en.pdf.

EU. (2011d). *Guide for the procurement of standards-based ICT: Elements of Good Practice (Draft)*. London: Europe Economics. Retrieved 12 February 2012 from http://cordis.europa.eu/fp7/ict/ssai/docs/ictprocurementworkshop-dec2011/draftguidelines-action23-21dec2011.pdf.

EU. (2011e). *Monitoring eAccessibility in Europe: 2011 Annual Report* Brussels: European Commission, DG Information Society and Media, Unit H.3 'ICT for inclusion'. Retrieved 23 March 2012 from http://www.eaccessibility-monitoring.eu/researchResult.aspx.

EU. (2011f). *Report on the implementation and interpretation of WCAG 2.0*. Brussels: Technosite and European Commission, Directorate General for Information Society amd Media, ICT for Inclusion.

Federal Office of Management and Budget. (2012). Federal Acquisition Regulatory Council [Web page]. Washington: U.S. Federal Office of Management and Budget. Retrieved 3 June 2012, from http://www.whitehouse.gov/omb/procurement_far_council

Fotopolus, M. C. (2006). Civil Rights across borders: Extraterritorial application of information technology accessability requirements under Section 508 of the Rehabilitation Act. *Public Contract Law Journal, 36*(1), 95-124.

Goggin, G. (2002). Rural lines of flight: telecommunication and post-metro dreaming. *Transformations, 2*.

Goggin, G., & Newell, C. (2000). An end to disabling policies? Toward enlightened universal service. *The Information Society, 16*(2), 127-133.

Government Information Service. (2011). *Interpreting the New Zealand Government's web standards: An agency self-assessment guide*. Auckland: Department of Internal Affairs. Retrieved 22 April 2012 from http://www.algim.org.nz/Documents/2011%20ALGIM%20Conference/Speakers%20Present ations/Interpreting%20the%20New%20Zealand%20Government%20Web%20Standards.pdf.

Hall, A., & Midgley, J. (2004). *Social policy for development*. London: Sage Publications.

Hill, E. (2012). The promise of accessible technology: challenges and opportunities. Paper presented at the *U.S. Senate Committee on Health, Education, Labor amd Pensions*, 7 February 2012. Retrieved 6 June 2012, from http://g3ict.com/download/p/fileId_894/productId_208.

Houses of the Oireachtas. (2005). *Disability Act 2005*. Dublin: The Stationary Office, Government Publications. Retrieved 16 February 2012 from http://www.oireachtas.ie/viewdoc.asp?DocID=4338&CatID=87.

HRDC. (2009). *Advancing the Inclusion of People with Disabilities 2009*. Ottawa: Human Resources and Skills Development Canada. Retrieved 11 March 2012 from http://www.hrsdc.gc.ca/eng/disability_issues/reports/fdr/2009/page08.shtml.

HREOC. (2005). *WORKability II: Solutions – People with Disability in the Open Workplace*. Sydney: Human Rights and Equal Opportunity Commission. Retrieved 12 August 2011 from http://www.humanrights.gov.au/disability_rights/employment_inquiry/index.htm#issues.

Hyun, J. (2009). Policies and Activities on Increasing ICT Accessibility in Korea. Paper presented at the *UNESCAP 2nd Regional Workshop on the Enhancement of Information and Communication Technology Accessibility for Persons with Disability*, Incheon, Korea. Retrieved 21 October 2011, from http://www.unescap.org/.

Hyun, J., & Min, H. (2011). Korea's Web Accessibility Activities - Focus on Korea Web Content Accessibility Guidelines 2.0. Paper presented at the *The Eighteenth APT Standardization Program Forum*, 23-26 May 2011, Bangkok, Thailand.

Hyun, J., Moon, J., & Hong, K. (2008). Longitudinal Study on Web Accessibility Compliance of Government Websites in Korea. *Lecture Notes in Computer Science, 5068*, 396 – 404.

IBM. (2011). Human Ability and Accessibility Center: Laws, standards and regulations [Web page]. IBM. Retrieved 5 April 2012, from http://www-03.ibm.com/able/laws/index.html

Iizuka, J. (2005). Introduction to Guidelines for Older Persons and Persons with Disabilities (Japan Industrial Standard X 8341) and Fujitsu's Approach to Standardization. *Fujitsu Scientific & Technical Journal, 41*(1), 38-46.

Innes, G. (2007). Accessible procurement: A market driven approach which benefits all Australians. Paper presented at the *Institute of Public Administration Australia Conference*, 20

September 2007, Perth. Retrieved 25 October 2011, from
http://www.humanrights.gov.au/disability_rights/speeches/2007/procurement.htm.

Innes, G. (2011). Accessible procurement and promotion of equality in employment or: It's the same old song but with a different meaning now that policy's moved on. Paper presented at the *Department of Finance and Deregulation*, 2 August 2011, Canberra. Retrieved 12 October 2011, from http://www.humanrights.gov.au/disability_rights/speeches/2011/finance.html.

Jaeger, P. T. (2006). Assessing Section 508 compliance on federal e-government Web sites: A multi-method, user-centered evaluation of accessibility for persons with disabilities. *Government Information Quarterly*(23), 169-190.

Joseph, R. (1993). The politics of telecommunications reform in Australia. *Prometheus, 11*(2), 252-270.

Le Couteur, J. (2011). ACT Public Service Employment Strategy for People with Disability. Paper presented at the *Best of the Best Disability Employment Forum*, 21st October 2011, The Victorian Equal Opportunity and Human Rights Commission, Level 3, 204 Lygon Street, Carlton, VIC. Retrieved 25 October 2011, from http://www.adde.org.au.

Maguire, B. (2008). *Report to Australian Mobile Telecommunications Association (AMTA) Access Committee on Work of the US Access Board Pursuant to Refresh of Rehabilitation Act Section 508 and Telecommunicatinos Act section 255* Sydney: Australian Human Rights Commission. Retrieved 20 October 2011 from
http://www.hreoc.gov.au/disability_rights/communications/amta.htm.

Maskery, H. (2007). Crossing the Digital Divide—Possibilities for Influencing the Private-Sector Business Case. *The Information Society, 23*, 187-191.

McCrudden, C. (2007). *Buying social justice: Equality, government procurement and legal change*. Oxford: Oxford University Press.

MIAC. (2010). *The new strategy in information and communications technology (IT): Roadmaps*. Tokyo: Ministry of Internal Affairs and Communication. Retrieved 3 March 2012 from http://www.kantei.go.jp/foreign/policy/it/100622.pdf.

Ministerio de Trabajo y Asuntos Sociales. (2004). *I Plan Nacional de Accesibilidad 2004 – 2012*. Madrid: Instituto de Mayores y Servicios Sociales. Retrieved 25 April 2012 from http://sid.usal.es/idocs/F8/FDO12610/pndaa.pdf.

Ministry of Internal Affairs and Communications, Japan,. (2010). *Information and Communications in Japan*. Tokyo: Ministry of Internal Affairs. Retrieved 12 March 2012 from http://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2010/2010-index.html.

MSAI. (2011). *UN Convention on the Rights of Persons with Disabilities: Denmark's first report to the UN Committee on the Rights of Persons with Disabilities on measures taken with a view to implementing the UN Convention of 13 December 2006 on the Rights of Persons with Disabilities*. Copenhagen: Ministry of Social Affairs and Integration. Retrieved 10 February 2012 from http://www.sm.dk/Temaer/sociale-omraader/Handicap/Documents/Engelsk_FNs_rapport_22082011.doc.pdf.

Myers, M. D. (1997). Qualitative research in information systems. *MIS Quarterly, 21*(2), 241-242.

Narasimhan, N. (2010). *e-Accessibility Policy Handbook for Persons with Disabilities: Based upon the ITU-G3ict e-Accessibility Policy Toolkit for Persons with Disabilities*. Mubai: ITU, G3ict and the Centre for Internet and Society in association with Hemtech India. Retrieved 22 May 2012 from http://cis-india.org/accessibility/publications/e-accessibility/at_download/file.

NDA. (2006). Code of Practice on Accessibility of Public Services and Information provided by Public Bodies [Web page]. Dublin: National Disability Authority. Retrieved 16 February 2012, from http://www.nda.ie/cntmgmtnew.nsf/0/3DB134DF72E1846A8025710F0040BF3D/$File/final drcode_nda_02.htm

NDA. (2009). Monitoring implementation of the NDA's Code of Practice on accessibility of public services and information provided by public bodies. Paper presented at the *3rd Access Officer Conference, National Disability Authority*, 3 April 2009, Radisson SAS Hotel, at

Dublin. Retrieved 16 February 2012, from
http://www.nda.ie/Website/NDA/CntMgmtNew.nsf/0/D2990315EBD8F6038025759300553
B1D?OpenDocument.

NDA. (2011). *Annual Report 2010*. Dublin: National Disability Authority. Retrieved 16 February 2012
from
http://www.nda.ie/Website/NDA/CntMgmtNew.nsf/0/26393AB35369711B8025792C003E3
774?OpenDocument.

NIA. (2010). *2010 Informatization White Paper*. Seoul, Republic of Korea: National Information
Society Agency. Retrieved 24 February 2012 from
http://eng.nia.or.kr/open_content/board/fileDownload.jsp?tn=PU_0000100&id=56952&seq
=1&fl=7.

NPS. (2006). *European Communities (Award of Public Authorities' Contracts) Regulations 2006*.
Dublin: National Procurement Service. Retrieved 16 Fenraury 2012 from
http://www.etenders.gov.ie/guides/Guide_Download.aspx?id=1101.

OECD. (2010). *Denmark: Efficient e-Government for Smarter Service Delivery* Paris: OECD. Retrieved
23 February 2012 from http://dx.doi.org/10.1787/9789264087118-en.

Ohta, S. (2004). Japan: Step by Step towards Disability Anti-Discrimination Law. *Disability World,*
(Issue no. 25 September-November). Retrieved 12 November 2011 from
http://www.disabilityworld.org/09-11_04/gov/japan.shtml.

Olalere, A., & Lazar, J. (2011). Accessibility of U.S. federal government home pages: Section 508
compliance and site accessibility statements. *Government Information Quarterly, 28*(3), 303-
309.

Pal, J., Vartak, A., Vyas, V., Chatterjee, S., Paisios, Nektarios, & Cherian, R. (2010). A Ratification of
Means: International Law and Assistive Technology in the Developing World. Paper
presented at the *ICTD2010 4th International Conference on Information and Communication
Technologies and Development*, Royal Hollaway, London. Retrieved 20 October 2011, from
http://www.ictd2010.org/.

Park, H. M. (2012). The Web Accessibility Crisis of Korea's Electronic Government: Fatal
Consequences of the Digital Signature Act and Public Key Certificate. Paper presented at the
45th Hawaii International Conference on System Sciences (HICSS), January 4-7, 2012, Grand
Wailea, Maui, Hawaii.

Petticrew, M., & Roberts, H. (2006). *Systematic reviews in the Social Sciences: A practical guide*.
Carlton, Victoria: Blackwell Publishing.

Productivity Commission. (2004). *Review of the Disability Discrimination Act 1992* (No. 30).
Melbourne: Productivity Commission. Retrieved 22 May 2012 from
http://www.pc.gov.au/__data/assets/pdf_file/0008/93986/disability-discrimination.pdf.

Public Service Commission of Canada. (2011). *Recruitment of Persons with Disabilities: A Literature
Review*. Ottawa: Public Service Commission of Canada. Retrieved 6 June 2012 from
http://www.psc-cfp.gc.ca/plcy-pltq/eead-eeed/rprt/pwd-ph/index-eng.htm#toc15.

Pusey, M. (1991). *Economic Rationalism in Canberra*. Sydney: Cambridge University Press.

Queensland Government. (2007). *Best practice guide for ICT Purchasing*. Brisbane: Public Works,
Queensland Government.

Silverstein, R. (2012). *Framework for Designing and Implementing Accessible Information and
Communication Technology (ICT) Strategic Plans*. Washington: Office of Disability
Employment Policy, U.S. Department of Labor. Retrieved 1 March 2012 from
http://www.dol.gov/odep/pdf/20120224FDIA-ICT-StrategicPlans.pdf.

Soede, M., Blijham, N., & Verdonschot, M. (2009). User Empowerment in Standardization. In C.
Stephanisids (Ed.), *Universal Access in HCI, Part I* (Vol. 5614, pp. 609-214). Heidelberg:
Springer-Verlag Berline.

TEDICORE. (2005). *Inquiry into Equal Employment Opportunity and Participation for People With Disabilities*. Towong, Queensland: TEDICORE (Telecommunications and Disability Consumer Representation).

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology, 8*(1), 45.

Thoren, C. (2007). *Comments to H. Yamada's paper on ICT accessibility standardization and its use in policy measures*. Stockholm: VERVA - Swedish Administration Development Agency. Retrieved 6 June 2012 from http://g3ict.org/download/p/fileId_686/productId_103.

Turner, M. (2012). Statement of Mark Turner, Director Center for Accessible Media California State University Paper presented at the *U.S. Senate Committee on Health, Education, Labor and Pensions*, 7 February 2012, Washington D.C. Retrieved 11 March 2012, from http://www.help.senate.gov/hearings/hearing/?id=15eea6a0-5056-9502-5d55-b899d73ef5f9.

U.S. Access Board. (2012). Unitded States Access Board: A Federal Agency Committed to Accessible Design [Web page]. U.S. Access Board. Retrieved 5 June 2012, from http://www.access-board.gov/about.htm

Vicente, M. R., & Loopez, A. J. (2010). A mulitdimensional analysis of the disability digital divide: Some evidence for Internet use. *The Information Society, 26*(1), 48-64.

von Axelson, H. (2010). The Swedish approach to web accessibility. Paper presented at the *12th Meeting of the i2010 e-Inclusion sub-group*, 28 - 29 January 2010, Valletta, Malta. Retrieved 2 May 2012, from http://ec.europa.eu/information_society/activities/einclusion/docs/subgroupmtg_jan10/sw_web_access.pps.

Waddell, C. D. (2009). Public Procurement of Accessible ICTs. Paper presented at the *Asia-Pacific Regional Forum on Mainstreaming ICT Accessibility for Persons with Disabilities*, 25-27 August 2009, Bangkok, Thailand. Retrieved 1 August 2011, from http://www.e-accessibilitytoolkit.org/toolkit/public_procurement/Public_Procurement_training.

Waddell, C. D. (2010). Rationale for public procurement policies incorporating ICT accessibility mandates [Web page]. G3ict. Retrieved 6 June 2012, from http://www.e-accessibilitytoolkit.org/toolkit/public_procurement/rationale_for_public_procurement

Wainwright, D., Green, G., Ed, M., & Yarrow, D. (2005). Towards a framework of benchmarking ICT pracitce, competence and performance. *Performance Measurement and Metrics, 6*(6), 39-52.

Watanabe, T. (2008). Case Study of JAPAN: ICT a11y Guidelines. Paper presented at the *UN-ESCAP Regional Workshop on Enhancement of ICT Accessibility for People with Disabilities*, 29 September, 2008, Korea. Retrieved 2 November 2011, from www.unescap.org/esid/meetings/ICT/PresentC.pdf.

Watson, L. (Producer). (2012, 29 February) BS8878 Web Accessibility Code of Practice [Slideshare]. Chair of the British Computer Association of the Blind. Retrieved 9 March 2012, from http://www.slideshare.net/Nomensa/bs8878-web-accessibility-code-of-practice.

Weiss, T. C. (2010, 14 March 2010). Disability in Japan. *Disabled World*. Retrieved 6 June 2012 from http://www.disabled-world.com/news/asia/japan/japan.php.

Yamada, H. (2007a). *ICT accessibility standardization and its use in policy measures*. Sophia Antipolis Cedex: ICT Standards Board (ICTSB), European Telecommunications Standards Institute - ETSI. Retrieved 4 March 2012 from http://www.ictsb.org/Working_Groups/DATSCG/Documents/Accessibility%20standardization.pdf.

Yamada, H. (2007b). ICT accessibility standardization and its use in policy measures. Paper presented at the *TEITAC (Telecommunications and Electronic and Information Technology Advisory Committee, U.S. Access Board)*, 23 May 2007.

Yamada, H. (2010). Current status of e-government in Japan and its future direction - electronic application services. *Quarterly Review, 36*, 19-33.

Yamada, H. (2011a). *ICT Accessibility Trends in Japan*. Tokyo: The Japan Web Accessibility Consortium. Retrieved 5 March 2012 from http://www.jwac.or.jp/shared/data/presentationbyhajimeyamada.ppt.

Yamada, H. (2011b). Issues surrounding standardization and promotion of web accessibility. *Quarterly Review, 41*, 31-42.

Appendix

Focus Groups Report

Introduction

As part of the research project on Government ICT Purchasing, two focus groups were conducted in Melbourne and Sydney in late November and early December 2011. Two separate interviews were held with individuals with disabilities, one in Canberra and the other by Skype who were unable to attend the focus groups but were keen to participate.

While employment is not the central theme of this research project, it is seen as a driver for Governments to establish a program of accessibility criteria in their ICT purchasing policy. The discussion in the focus groups revolved around ICT and employment as this provides background to the gaps in current ICT accessibility in the workplace and thus points to factors important in incorporating accessibility criteria in Government purchasing decisions.

This report will analyse the discussion and focus on the key findings from the focus groups.

Methodology

Focus group sessions were considered the most appropriate method of obtaining the necessary data. This is due to the positive aspects of group dynamics for such a topic. It was also an opportunity to inform participants about accessibility criteria in public procurement and its implications for improved access to employment for people with disabilities and the expected flow-on effects of improved accessibility to ICT in the general marketplace.

Focus group questions were:

What telephone and hardware and software have you used while working?

Have you needed particular workplace modifications to this equipment?

How did you experience this process?

How did the employer deal with these requirements?

Would you like to see this done differently and if so, how?

Are there any particular phone systems, hardware or software that you would like to use at work?

Are there any other workplace experiences with ICT that you would like to share?

The focus groups were structured as follows:

- Morning tea

- Welcome and introductions

- Background to research

- Information about government purchasing in ICT

- Focus group questions

- Conclusion and thank yous

- Lunch

The focus groups were videotaped to aid in analysing the data after the focus group sessions. The type of equipment used by participants and the process for workplace modifications have been reported. In addition, any barriers to the use of ICT in the workplace have been analysed and reported.

Focus group participants were recruited through the major Australian organisations representing people with disabilities. These included:

- Australian Federation of Disability Organisations

- Australians for Disability and Diversity Employment

- Blind Citizens Australia

- Deafness Forum

- Deaf Australia

- People with Disability Australia

- Physical Disability Council of Australia

- Women With Disabilities Australia

Key people in these organisations who were known to Gunela Astbrink, the focus group facilitator were approached by email. Gunela introduced herself, explained the research project and requested the organisation to distribute an invitation to their members to attend a focus group either in Sydney or Melbourne in November or early December. A Participant Information Sheet was attached to a follow-up email for distribution to the organisation's membership. Participants who are or have been employed in the state, territory or federal government public service were targeted. However, where it was not possible to find participants meeting these criteria, participants who have been recently or who are presently employed in other sectors were accepted. Participants were asked to provide anecdotal information about their experience of using ICT in the workplace with a particular focus on the Australian public service, where possible.

Prior to their attendance at the focus group, participants were asked to complete and sign a consent form. This was to consent to participating in a three-hour focus group and answering questions about their experiences of ICT equipment in the workplace and to having the focus group videotaped. The participants were informed that any report from the focus groups would not identify any individual and pseudonyms would be used if necessary.

These processes were part of the University of Wollongong Ethics Committee requirements and helped to clarify any issues with participants. At an early stage of the project, the University's Ethics Committee considered and approved the project's application to hold the focus groups.

Composition of focus groups

In both the Melbourne and the Sydney focus groups, there were several people who sent apologies so the numbers were lower than expected. However, the discussion was excellent with informed and useful comments from the majority of people in the groups.

The Melbourne focus group was held on 28th November 2011 with six participants and two AUSLAN interpreters.

Participants comprised:
- Representative from a blindness advocacy organisation
- Representative from a disability employment advocacy organisation
- Representative from a disability employment agency
- Two blind individuals
- One Deaf individual

The Sydney focus group was held on 1st December 2011 with seven participants.

Participants comprised:
- Employment support representative from a blindness organisation
- Employment support representative from a Deafness organisation
- Representative from a Deafblindness organisation
- One Deafblind individual
- Two representatives from hearing impairment advocacy organisations
- One person with a physical disability

In addition, one interview was done face-to-face in Canberra with a person with low vision and another interview was done via Skype with a person with dyslexia.

This is considered a good cross-section of people with disabilities with a wide range of experiences to share on the topic.

Key findings

The key findings from the focus group discussions are detailed under the following headings. Participants responded to all the questions with very useful insights into their own experiences and in some cases, those of colleagues. They were given the opportunity to share ideas among themselves as well. This provided a richer source of information rather than participants concentrating solely on each question sequentially and responding to the facilitator.

Type of hardware and software used by focus group participants

Focus group participants were asked what type of hardware and software they used in the workplace. This may or may not be slightly different to what they use away from work. Please note that other people with disabilities may use other types of hardware and software so the following list is not exhaustive.

Blind and low vision participants:
- iPhone (mobile phone with built-in accessibility features)
- JAWS screen reading software with speech output
- Scanner
- OCR software such as OmniPage
- Headphones (twin set to switch between computer and phone)
- Standalone printer

Deaf participants:
- Skype video for AUSLAN communication (webcam needed)
- iPhone video for AUSLAN communication
- iPad for AUSLAN communication and real-time captioning
- National Relay Service – based on both TTY and Internet relay
- Video Relay Service (trial through Australian Communication Exchange)

Deafblind participant:
- Deafblind Communicator (TTY with Braille display)
- ZoomText (magnifies content on computer screen)
- NVDA screen reading software
- Scanner

Participant with dyslexia:
- iPhone with inclusive apps such as text to speech and personal memo recorder
- iPad
- Laptop with Dragon Naturally Speaking voice recognition software and TextAloud software (reads emails and web pages)

Participants with hearing impairment:
- TTY
- Captel phone (trial captioned telephony service through the Australian Communication Exchange)
- iPad for real-time captioning
- Phone with tone control
- Phone with volume control (minimum of 30dB gain)
- Hearing loop in meeting room, reception desk and in office
- National Relay Service, usually through Internet relay
- Mobile phones with FM capability and/or Bluetooth functionality

Participant with physical disability:
- Voice recognition software such as Dragon Naturally Speaking

Workplace modifications

A key message from the Melbourne and Sydney focus groups was that people need to self-advocate to get the workplace equipment to meet their needs. Some people were reticent in asking their employer for expensive equipment. There were a number of reasons for this including lack of understanding that the employer did not have to pay for the equipment. In many cases, the employer was not aware of this either. One participant thought it "best to have public policies in place so that he doesn't have to ask".

The process of obtaining workplace modifications has improved considerably over the past few years and JobAccess, the government agency operating the scheme is considered in a relatively positive light. However, a 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.

Importantly, from 2010 workplace modifications can be done before starting the job. This was a problem in the past and is reflected in comments from focus group participants. If workplace modifications are applied for by a knowledgeable organisation, for example, the Australian Federation of Disability Organisations, the process can be streamlined. An example was given of obtaining an iPad. It took one week to get an appointment with a JobAccess officer who does the job assessment. This is then considered, and if successful, purchased by the client, and reimbursed by JobAccess. The whole process took three weeks and this is considered fast.

JobAccess funding for workplace modifications is available for employment over 13 weeks only but may be considered on a case-by-case basis for shorter appointments. Graeme Innes from Human Rights Commission stated the problems with a person needing to start a short-term appointment immediately and not being able to do so because of the wait for the equipment.

A person with a hearing impairment stated the importance of an employer or assessment officer asking rather than telling a person with a disability what they need. The job assessment officer may make assumptions that are not correct. It is important to assess a person as an individual in a particular job rather than pigeon-holing. For example, the Captel phone is assumed to be good for everyone with hearing loss but only works well for those with clear speech.

The support from disability employment services is mixed but crucial if accessibility is to be successfully implemented for the employee. A disability employment service within a disability service provider such as for Deaf or blind people tended to be more knowledgeable and supportive than general disability employment services who may not even have physically accessible premises.

Once a person is employed, it is difficult to get ongoing support. This has led to considerable frustration by employees with disabilities, some of whom have not been able to work productively even when the hardware or software has been supplied by JobAccess.

Network systems

A key issue mentioned was the problem of having assistive technology work within workplace network systems. ICT support staff were not available to "get through" security firewalls in government networks to enable the assistive technology like JAWS screen reading software to operate. Several participants discussed problems with getting JAWS to work in the network. One stated that the "IT Department had no idea how JAWS worked with network systems".

Another person clarified that JAWS cannot install with network security settings on. The security settings need to be turned off, JAWS installed and then security turned on again. Departmental IT staff need to work with disability employment service providers on IT issues as there is clearly a lack of understanding of interoperability. A person with a physical disability stated that in the private sector, employers were not keen to allow him to use his own voice recognition software because of network security issues.

In addition, problems were encountered when new systems are introduced without consideration of accessibility. An example was given of a new invoicing system that could not be used with assistive technology.

A disability employment specialist also stated that there often were firewall issues. He also made the point that it is ironic that the government funds the National Relay Service (NRS) but government agencies do not allow their employees to use it. For example, at Centrelink, a TTY couldn't be connected to access the NRS because it clashes with firewalls.

Another aspect is policies on what software is allowable in the workplace. An employment specialist stated that the government needs to ensure that systems are flexible. For example, the video relay service is available through Skype and on a mobile phone such as the iPhone 4 but government agencies do not allow this to be used. Another example is the iPad, which enables real time captioning, and government agencies should allow this to be used.

Communication hardware and software

Deaf people discussed issues with interpreting in the workplace. A Deaf respondent mentioned that the iPhone on a stand is good for remote interpreting. Remote interpreting frees up the time of interpreters especially travelling time to destinations. This is considered a real problem in regional areas where there is a significant expense in travel costs for interpreters.

Skype is used for interpreting. However, Skype may be restricted in some workplaces and this places a load on employees who need this to communicate effectively. TTYs were considered "almost obsolete" by one participant. Yet TTYs are currently the only method of access to emergency services for Deaf people.

Particular issues with the use of phones were raised. For example, there is no audio feedback for transferring calls for a blind person. Blind people have difficulty in transferring calls and identifying lines that are busy. It would be beneficial to have a phone with audio output and where transferring calls is easy.

Several participants stated "one size doesn't fit all". Systems need to be flexible to meet a variety of requirements and with digital systems, be able to connect assistive technology.

A person with a hearing impairment stated that sometimes it was easier to get a solution in a family or personal situation rather than in employment. She used the Captel phone as an example, which is difficult to connect in the workplace. There may be issues of getting it to connect through the digital phone network. This is not difficult but many employers are reluctant to consider this requirement.

A person with a physical disability stated that phones were too small and not easily holdable or usable for him.

One person with a hearing impairment explained that product literature stated that the phone system could connect to a FM hearing loop but the IT staff could not achieve this.

The same person is frustrated with other phone equipment. Ten years ago, the analogue phone she used had a ring tone changer but in digital systems it is an add-on that is sometimes not available. She felt that each digital phone system uses its own technology with inherent complexities for accessibility.

Knowledge about hardware and software

There were different perspectives on the need for a person with a disability to be knowledgeable about the hardware and software to best meet their needs.

A Deaf participant stated that people with disabilities cannot be expected to have total knowledge of the latest technology to meet their needs. People with disabilities should receive training on practical aspects of technology. An in-house training tool would be advantageous.

A person with dyslexia stated that in his work, he talks to his students about their strengths and weaknesses and encourages them to be knowledgeable about their needs and what technology works for them. But he acknowledges that it is difficult to know about and keep up with new developments. Ironically, he feels that younger people think they know about technology but they do not have the detail needed about a particular product.

A key aspect is knowledge about technology and where to get the information. When a government department puts in a new system, for example, for phone or meeting room bookings, there should a sign-off on accessibility based on a report from an accessibility consultant. Currently, this is seldom done.

A person with a hearing impairment stated that his private sector employer was very supportive but he recognised that having technical knowledge helps to know what he needs before JobAccess is approached. He feels that JobAccess does not full expertise. There is an information flow problem.

This was supported by another participant with a hearing impairment. While her JobAccess experience is positive, she felt it was very difficult to get information. There should be a register of places to go to obtain information.

A specialist in disability employment services stated that it was "luck of the draw to get appropriate equipment". He felt that because JobAccess was the funding body, it was inappropriate for them to provide information. However, it was difficult to determine who should be providing information.

Guidelines and testing

Participants felt that meeting accessibility standards and doing testing for this is important.

While the Web Content Accessibility Guidelines are important, there are no known accessibility guidelines for software design. For blind people, there had been bad experiences of JAWS working with TRIM and SAP and this was more the design of the system and not security issues. Another example was a colleague who needed remote access to the workplace through CITRIX. As a JAWS

user, it had to work with CITRIX. The outsourced service provider to the NSW state government was not prepared to test the connection and so the employee could only use some parts of the system.

The specialist disability service provider stated that he goes into workplaces to check if JAWS works with databases etc – otherwise, the employee cannot do their job. He finds that sometimes he needs to go back to the developers to make the database accessible. This is more expensive than making the system accessible from the start.

Government employment of people with disabilities

While this is not the primary focus of the research, some remarks based on the focus group discussion need to be made about perceptions of employment of people with disabilities by Government departments and agencies.

The general sentiment was that government lacked commitment to improve employment opportunities for people with disabilities. This was felt by both individuals with disabilities and representatives from the specialist disability employment services. It was felt that the Australian Public Service needed to lead from the front. For example, the recruiting process needs to be improved and should include a person with a disability in the recruiting team.

One person stated that he has witnessed a strong frustration by many people with disabilities working in the public service. He said that "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". He also felt that there was a lack of clear grievance processes.

He stated that his employer has never asked him for feedback if his equipment and software is working properly.

The key issues are "people, bureaucracy and inflexibility". Employees with disabilities do not know where to go to get a problem resolved. There needs to be "thinking outside the box".

Discussion focused on the need for Disability Liaison Officers in government departments. The importance of this was outlined by one participant who has worked in a number of Federal Government agencies. He stated that smaller Departments and agencies have little experience of workplace modifications, in assessing needs, in using JobAccess and the Disability Employment Services. There was even confusion between Occupational Health and Safety and workplace modification in one case.

He mentioned that at his previous workplace in the Department of Education with a workforce of between 6000 and 7000, there was excellent experience of workplace modifications. Everything was ready on his first day of employment. There was a dedicated Disability Coordinator. The Department of Families, Housing, Community Services and Indigenous Affairs also has documented processes and a Disability Coordinator. However, many other Departments and agencies still do not know and do not have processes.

Mention was also made that in 2008, a Management Advisory Committee developed recommendations for employing people with disabilities but the reform did not stick – one reason could be that there were no accountability measures.

In the NSW State Government, there is a whole of government EmployAbility policy but no accountability measures.

The point was made that there is no enforceability for equal participation in the workplace and the Disability Discrimination Act (DDA) isn't being used enough. One participant even felt that government departments prefer to go through a DDA complaint rather than having to make change.

On a positive note, a suggestion was made that because the DDA is complaints-led, it would be better to have a checklist of accessibility measures for the employer - "expectation-led is better".

There is a need for increased community awareness about accessibility. The potential employer needs to know more about disability and as a consequence may not make assumptions about possible barriers in employing a person with a disability.

Government ICT purchasing

A specialist disability service provider stated that "all software government purchases need accessibility guidelines from the outset".

"Thinking from the ground up about accessibility, the government has to insist on this and be the driver". He went on to say that "they have to be reminded about filling the need of the public in a broader sense".

A person with a physical disability sent in an apology for participation in the focus group but wanted to stress that whatever procedure is adopted should be based upon a 'Minimum Adequate' basis rather than the lowest price. In past years he was a 'Contracts Manager' for a small company and saw over time that those who assessed tenders clearly went for the lowest price.

Another person commented that the "assistive technology industry is changing as more products are mainstreamed, for example iPhone and iPad apps". This has positive implications for government with options to purchase more mainstream products with built-in accessibility features.

One participant would like public procurement processes using Universal Design principles. Government software does not incorporate accessibility in, for example, HR systems and information systems for Ministers. He said that "while the cost of retrofitting for small agencies is prohibitive, it would save millions and millions of dollars for one single software system that can then incorporate accessibility". He continued that this "could save vast amounts of money if IT development was at service level rather than agency or Department level". This can remove key impediments to accessibility.

He gave an example of a whole of service model for the Parliamentary Work Flow system, where there is an exchange of information between Ministers and Departments. Currently, there are 13 different systems which are cumbersome for Ministers especially those working with more than one Department. There are plans to create one system across Departments. He suggests that this is a great opportunity to incorporate accessibility. The Department of Finance is leading the work through the Secretary's ICT Governance Board (SIGB) and is chaired by the Head of Finance. There is an awareness of accessibility features but it is not clear whether these will be taken into account. If they are, this type of approach could be used as a template for other whole of Government systems.

It was clear from the discussion that many people with disabilities have not considered the role that government ICT purchasing may have in making the workplace more accessible.

Conclusion

Based on the analysis of the focus group discussions, the main issues were:

- Lack of information about latest technologies
- Reluctance to ask for expensive equipment
- Difficulty in getting software to work with network systems, often because of firewalls
- Workplace policy that some software is not to be used eg Skype
- More government commitment needed to employ people with disabilities

A key issue emerging from the focus groups is the difficulty of connecting assistive technology with network systems. This may be due to firewalls and other security issues but it also relates to workplace policy on the type of hardware and software that can be used. This puts constraints on the employee with a disability in performing their job properly or, in some cases, at all. With accessibility criteria in government ICT purchasing, there should be accommodation made for this at the outset rather than being a problem faced by individual IT staff over and over again across different Departments and agencies.

Many focus group participants felt that the onus was on them to know exactly the technologies they needed in the workplace and then to request them of their employer. Firstly, it is difficult for the average person with a disability to keep up-to-date with the latest technologies and even to find the relevant information and secondly, some felt constrained in asking a new employer for what they consider expensive equipment. Some of these issues could be solved if the hardware and software were already in place because of accessibility criteria being met in government ICT purchasing.

Most of the focus group participants had limited understanding about government ICT purchasing and there is no reason why they should know about this somewhat esoteric area. However, it does highlight the importance of our research and the future value of the advocacy toolkit as an aid to assist disability organisations in working for change in the public procurement process.

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