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## Disability and the Web: Why Website Accessibility Matters

Vivienne Conway  
*Edith Cowan University*

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Vivienne Conway is a Ph.D. student in the School of Computer and Security Science, researching Website accessibility. In 2010, Vivienne won ALIA's Twila Ann Janssen Herr Award for Disability Services, acknowledging her Honors work on library web site accessibility. In her study, Vivienne found that none of the public libraries investigated passed the most basic criteria of WCAG 1.0 Priority Level A accessibility. In 2011, Vivienne was awarded a Google Student Award to attend the International Cross-Disciplinary Conference on Web Accessibility (W4A 2011) held in Hyderabad, India.

The seminar will be of interest to anyone interested in web site accessibility.

This Presentation is posted at Research Online.

<https://ro.ecu.edu.au/cinfosci/1>

## Disability and the Web: Why Website Accessibility Matters

INFOSCI@ECU SEMINAR SERIES  
MAY 30, 2011

VIVIENNE CONWAY, EDITH COWAN UNIVERSITY

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### What is Website Accessibility

- Relates to the design of the website
- Needs to be designed to:
  - Work for all people regardless of their technology, language, culture, physical or mental ability
  - Be accessible to people with a wide range of hearing, movement, sight and cognitive abilities
  - Remove barriers many people face in their physical world
- When a website does not address these issues
  - It creates barriers that exclude some people from using the Web
    - (W3C)

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### Needs vs. Perceptions

- Very few people are aware of the requirements of website accessibility, what it means, and what the consequences are of not having an accessible website.
- A website that is accessible sends a message:
  - This organization cares about including as many people as possible
  - This organization recognizes the needs of the individual

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**Who stands to benefit from website accessibility?**

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- Needs of the many vs. needs of the few
- Needs of the one vs. the needs of the many
- Needs of the one = needs of the many

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**Disability In Australia**

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- 1 in 5 Australians experience long term impairment (3.95 million people)
- 2.6 million of people with disabilities are under age 65 (equates to 15% of the <65 population)
- 86% of people with disability report a core limitation i.e. mobility, communication, restriction in schooling or employment

• (Interacting with government: Australians' use and satisfaction with e-government services 2009  
www.finance.gov.au/publications/interacting-with-government-2009/index.html)

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**The Vision for the Future**

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- An inclusive Australian Society that enables people with a disability to fulfil their potential as equal citizens
- “People with a disability have equal access to the information they need to make informed choices about all aspects of their lives and equal opportunities to access all means of communication” (AGIMO- Web Directions South presentation)

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### Where are we now?

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- Passive model
- NTS changes things for government websites
- Australian Human Rights Commission have clear guidelines
- Previous study: W.A. Libraries – not one met the minimum standard – WCAG 1.0 A

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### W.A. Public Library Websites - Audits

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- None of the websites was compliant to WCAG 1.0 Priority A
- All websites had code validation errors
- Almost all websites had images without alternative text
- Only one website tested would allow entry to the catalogue with a screen-reader
- Search results were confusing
- Difficult to get to the library catalogue
- No language specified
- Incorrectly nested headings
- Lack of method to skip navigational links
- Lack of PDF alternatives

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#### Library Website Checklist

Library Group Name: \_\_\_\_\_

Description	Yes	No	n/a
1. Accessibility features are easy to find			
2. Prominent 'contact us' link with details			
3. Clear text resizing controls at top of the page			
4. Clearly marked home link on every page			
5. Homepage lists key tasks			
6. It is easy to find shire and community information			
7. It is easy to find general library information			
8. It is easy to find out how to join the library			
9. It is easy to find a catalogue link			
10. It is easy to order an item			
11. There is a simple site map			
12. There is prominent search feature			
13. The search feature is easy to use			
14. Search results are simple to interpret and useful			
15. Low bandwidth version of the page is available			
16. Language translation link is available			
17. All tags are present for all images			
18. Presentation – well laid out and inviting			
Score /18			

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### Statement of the Problem

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- June 2010, Australian Government introduced the *Web Accessibility National Transition Strategy* (referred to as the *NTS*)
- *NTS* provides an opportunity to observe the efforts of the government to bring about website accessibility as well as observe the effect of the *NTS* on non-government websites
- No present mechanism for monitoring non-government websites apart from responding to complaints

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### What are the guidelines?

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- World Wide Web Consortium (W3C)
- Web Accessibility Initiative (WAI)
- Web Content Accessibility Guidelines (WCAG) Version 2.0

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### United Nations

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- United Nations Convention on the Rights of Persons with Disabilities sets the stage for providing equality of access to information and communications technologies:
  - The Convention marks a "paradigm shift" in attitudes and approaches to persons with disabilities. It takes to a new height the movement from viewing persons with disabilities as "objects" of charity, medical treatment and social protection towards viewing persons with disabilities as "subjects" with rights, who are capable of claiming those rights and making decisions for their lives based on their free and informed consent as well as being active members of society. ([United Nations, c2008](#))

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### Disability Activism

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- People with disabilities may use technology differently from others (e.g. use of screen-readers, Braille readers)
- “The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect” from Tim Berners-Lee, founder of the Web and Director of W3C
- “onus can be placed on a wider society to make the Internet and web accessible, rather than the onus being on the individual disabled person to acquire specific technical aids and/or to struggle with poorly designed and often inaccessible websites” (Adams & Kreps, 2009)

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### Legal Precedent

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- Sydney Olympics
- Canadian Government
- Target

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### World Wide Web Consortium Web Accessibility Initiative (W3C WAI)

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- Web Content Accessibility Guidelines (WCAG)
- 1999 – WCAG 1.0
- 2008 – WCAG 2.0 – Priority Levels A, AA, AAA
  - designed to be technology-independent
  - designed as a series of testable statements
  - applies more broadly to advanced technology
  - more precisely testable with a combination of automated and human testing
  - relies on 4 principles known as POUR

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### WCAG Concepts

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WCAG 2.0 at a glance (from W3C WAI website)

- P – perceivable
- O – operable
- U – understandable
- R – robust

- 3 Priority Levels –
- A – Minimal acceptable level
- AA – Goal of *NTS*
- AAA – Maximum level – not practical for all sites/pages depending on content

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### What is the *NTS*?

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- a staged 3-year transition to WCAG 2.0 Priority Level AA
- includes compliance checks
- includes a work plan
- is enforceable
- is not optional
- is available online for anyone to use

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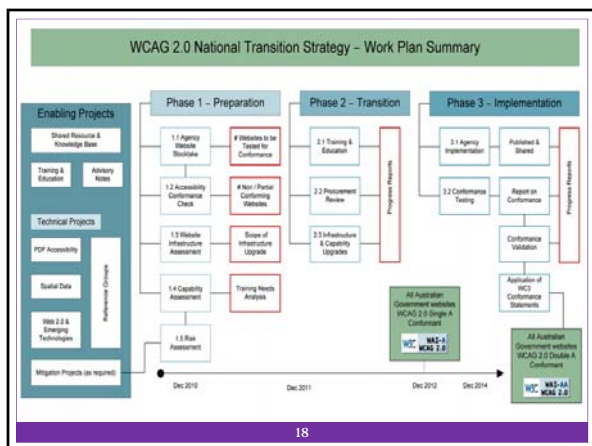
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### Ph.D. Research

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- To conduct a case study that will observe and document the transition of government and non-government websites in Australia to the WCAG 2.0 standards.
- To compare the website accessibility evaluation scores between the 3 categories over a longitudinal comparison study.
- To develop a website accessibility evaluation framework that can be used by website owners and developers to determine their own compliance.

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### Corporate Website Accessibility

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- will be part of study
- useful comparison to see if *NTS* influences website accessibility of other categories
- legislation has a marked effect on these websites – influenced by buying power, market share, public opinion
- Law (2010) – Australian study
  - examined issues beyond those of technical accessibility compliance and looked at corporate attitudes
  - identified 7 critical factors for corporate websites

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### This research will:

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- Assess the efforts of a country to bring government websites into compliance with *WCAG 2.0 AA* in a planned, supported manner
- Assess how other organisations, also mandated to achieve compliance with these same goals, do so outside of the *NTS*
- Observe through a longitudinal study the transition of websites toward accessibility compliance by the different category of websites studied

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**This research will also:**

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- Determine critical success factors for organisations achieving website accessibility compliance
- Observe common obstacles in achieving website accessibility compliance and document the methods for dealing with these obstacles
- Determine key factors required in a universal website accessibility evaluation framework

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**Research Methods and Design**

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**Case Study – NTS**  
(consists of approximately 100 representative websites)

**Longitudinal Comparison**  
(consists of assessing 3 categories of websites over the study period)

<b>Category 1</b> Federal Government (mandated to follow NTS)	<b>Category 1</b> State/Territory /Local Gov't. (mandated to WCAG 2.0 but optional NTS)	<b>Category 3</b> Not for profit, and corporate (outside of NTS)
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**Mapping research questions to analysis tools**

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**Case Study: Sample Group**

Category 1 → Category 2 → Category 3

**Longitudinal Comparison**

**Mixed Method Approach**

<b>Principal Research Question</b> Quantitative Tools Hybrid Website Audit Tool: <ul style="list-style-type: none"><li>• 2 automated tools</li><li>• manual checklist</li><li>• screen-reader</li><li>• code validation</li></ul>	<b>Supporting Research Questions</b> Qualitative Tools <ul style="list-style-type: none"><li>• surveys</li><li>• interviews</li></ul>
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### Some Examples:

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Some of the worst:

- <http://www.mrbottles.com/>
- <http://www.lingscars.com/>
- <http://www.yvettesbridalformal.com/>

Some of the best:

- <http://www.bbc.co.uk/ouch/>
- <http://digitalaccessibilitycentre.org/>
- <http://www.visionaustralia.org.au/>

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### One of the best:



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### One of the worst:



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### W4A 2011 - Hyderabad, India

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- International Cross-Disciplinary Conference on Web Accessibility
- A part of the 20<sup>th</sup> International World Wide Web Conference
- Included 2 days of discussions with experts from W3C, industry and academic institutions

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### The Spoken Web – IBM India

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- India has more mobile phones than bank accounts
- Works parallel to the WWW
- User gets a phone number which works like a URL
- People calling that number get the information placed on the site by the owner
- Successfully trialled – some uses include
  - Farming information – when to bring in produce
  - Weather forecasts
  - Emergency information
  - Matrimonial advertisements

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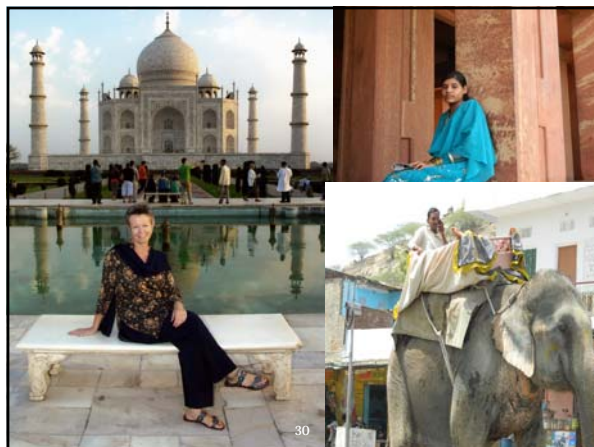
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### Summary

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- PhD. Research follows research into public library website accessibility
- PhD. - Primary question – outcomes of NTS
- Supporting questions – relationship between type of organisation and website accessibility compliance, critical success factors, proposed website accessibility evaluation framework
- Australia is embarking on a unique approach to changing the web experience for people with disabilities
- Will eventually affect all websites in Australia

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### References

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- A full reference list is available in the research proposal and will be supplied upon request.
- *NTS* available online at:
  - <http://www.finance.gov.au/publications/wcag-2-implementation/docs/wcag-transition-strategy.pdf>

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