SAS GLOBAL FORUM 2019

USERS PROGRAM

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Introducing Accessibility

What a complete waste of time and effort
Introducing Accessibility

- Why Bother?
- Disability and IT
- Who and How?
- Standards and Guidelines
- Other Accessibility Considerations
- Accessibility Tools
Introduction – Why?

• Accessibility

Accessibility means that people with disabilities can perceive, understand, navigate, and interact with computer technology.

• Disability

Anyone with a long-term mental or physical impairment which affects their ability to carry out day-to-day activities. Long term meaning that it has lasted or is expected to last a year or more.
Introduction – Why?

• Extent in world population
  • Over 1 billion people – 20% population \(^{(1)}\)
  • 285M Blind or Partially Sighted people in World \(^{(2)}\)
  • 275M Deaf and Hearing Impaired \(^{(3)}\)

1. www.handicap-international.org.uk
2. WHO (2012)
Introduction – Why?

• Extent in US population
  • 56.7 million people – 19.3% population (1)
  • 17% are born with disabilities (1)
  • 8.1 million people with sight problems (1)
  • 7.6 million Deaf and Hearing Impaired (1)
  • Total spending power - $490 bn (2)

2. American Institutes for Research (AIR)—A Hidden Market
Introduction – Why?

• The UN Convention on the Rights of Persons with Disabilities (1) states:

  "States Parties shall also take appropriate measures to promote access for persons with disabilities to new information and communications technologies and systems, including the Internet."

• Americans with Disability Act (2) requires:

  that all people have equal access to goods, services, and communication
  - Section 508

2. https://www.ada.gov/
Introduction – Disability and IT

• Vision
  • Completely blind
  • Partial sight
  • Colour Blindness

• Hearing
  • Complete deafness
  • Partial hearing loss

• Thinking
  • Difficulty understanding content
  • Dyslexia
Introduction – Disability and IT

• Learning and Remembering
  • Inability to learn new or complex information or processes
  • Inability to remember previous experiences

• Movement
  • Limb disorder
  • RSI, carpal tunnel syndrome
Who Is Responsible For Accessibility?
How to Achieve Accessibility

FOLLOW STANDARDS

TALK TO OTHER PEOPLE

UNDERSTAND DIFFERENT USER AGENTS

TEST

KEEP IT SIMPLE (USE COMMON SENSE)
WCAG and Other Standards

If you have an evening spare...
POUR

• Perceivable
  • Content is made available to the senses - sight, hearing, and/or touch

• Operable
  • Interface forms, controls, and navigation are operable

• Understandable
  • Content and interface are understandable

• Robust
  • Maximize compatibility with current and future user agents, including assistive technologies
Web Content Accessibility Guidelines

• WCAG 1.0
  • First set 1994
  • 38 different sets before 1998
  • WCAG 1.0, 1999
• WCAG 2.0
  • 2008
• WCAG 2.1
  • June 2018
Web Content Accessibility Guidelines

• WCAG – Priorities and Level
  • Priority 3 = Level AAA
    Difficult
  • Priority 2 = Level AA
    Something of a challenge
  • Priority 1 = Level A
    Easier
Other Standards

• EN 301 549
• Microsoft Accessibility
• UK Government Service Manual

However...

• They essentially boil down to POUR and WCAG
Guidelines and Resources

• W3C guidelines
  http://www.w3.org/WAI/intro/components
  http://www.w3.org/WAI/GL/WCAG20/tests

• UK Government Service Manual
  https://www.gov.uk/service-manual/helping-people-to-use-your-service/making-your-service-accessible-an-introduction

• Microsoft
Guidelines and Resources

• Colour Contrast Analyser
  https://www.paciellogroup.com/resources/contrastanalyser/

• WebAIM
  http://webaim.org/techniques

• A11y
  http://a11yproject.com/

• Tenon
  http://tenon.io/
Other Accessibility Considerations

• ARIA
• Agile
• The Importance of 100% Accessibility
• Usability
• Automated Testing
ARIA

• A way of marking up content to be more understandable by assistive technologies

• **Does not interfere with the way a browser displays/behaves**

• Roles
  • Link, Combobox, Checkbox, Button

• States & Properties
  • aria-disabled, aria-hidden, aria-invalid, aria-required
ARIA

• **Important** - ARIA is a sticking plaster
  • Useful for fixing code
  • Is useful in a few instances, e.g. when needing to apply several labels to a form field.
  • Can be written to provide fully accessible functionality, but
    • It’s not easy
    • Will almost certainly break standard screen reader functionality and may render page unusable.
Agile

• Waterfall
  • Large accessibility effort once or twice a year
  • Accessibility seen as a “nice to have” that can be quickly fixed at the end of the project
  • Hmmm
Agile

- Agile
- Too expensive for regular extensive tests
- Accessibility Champions
- Design with accessibility in mind
- Develop with accessibility in mind
- Everyone is responsible
- Given the right focus, everyone learns about its importance
100% Accessibility

• Less than 100% is unlikely to be good enough.
User

*e.g. JohnS*

Password

Forgot your password?

Login
Usability

• Not talking about standard usability here.
• An application can pass all criteria to be deemed accessible, but still not be sensibly usable by an assistive technology user.
• 2004 DRC Report surveyed 1000 publicly available web sites
  • 45% of empirical problems not trapped by W3C checkpoints
  • On average 108 individual access barriers per page!
Usability

• If the standards are not good enough, how can you test/develop for this?
• You have to put yourself in the mind of the disabled person!
  • Can they do this?
  • Even if they can is it going to take too long?
Automated Testing

- Great in principle
- Hundreds of different tools
- Pick up “simple” errors
- Get 40% AT BEST
Assistive Technology Tools

• Screen Readers
  • Jaws
  • NVDA
  • VoiceOver, VoiceAssist
  • Narrator
  • Braille

• Magnifiers
  • Zoomtext
  • Zoom
  • Magnifier
Assistive Technology Tools

• Voice Recognition
  • Dragon,
  • Siri?
• Dyslexia
  • TextHelp
• Mind Mapping
• Ergonomic Mice
• Ergonomic Keyboards
Demonstrations

• Jaws
• Dragon
Assistive Technology Tools

• What if there are problems even with these tools?
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Thank you!

Contact Information
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