SAS® GLOBAL FORUM 2019

USERS PROGRAM

APRIL 28 – MAY 1 | DALLAS, TX

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Introducing Accessibility

What a complete waste of time and effort

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Introducing Accessibility

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

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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 is has lasted or is expected to last a year or more.

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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)
3. WHO (2004)

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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)

1. Americans with Disabilities: 2010 www.census.gov/prod/2012pubs/p70-131.pdf
2. American Institutes for Research (AIR)—A Hidden Market

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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

1. https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities/article-9-accessibility.html
2. https://www.ada.gov/

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Introduction – Disability and IT

- Vision
  - Completely blind
  - Partial sight
  - Colour Blindness
- Hearing
  - Complete deafness
  - Partial hearing loss
- Thinking
  - Difficulty understanding content
  - Dyslexia

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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

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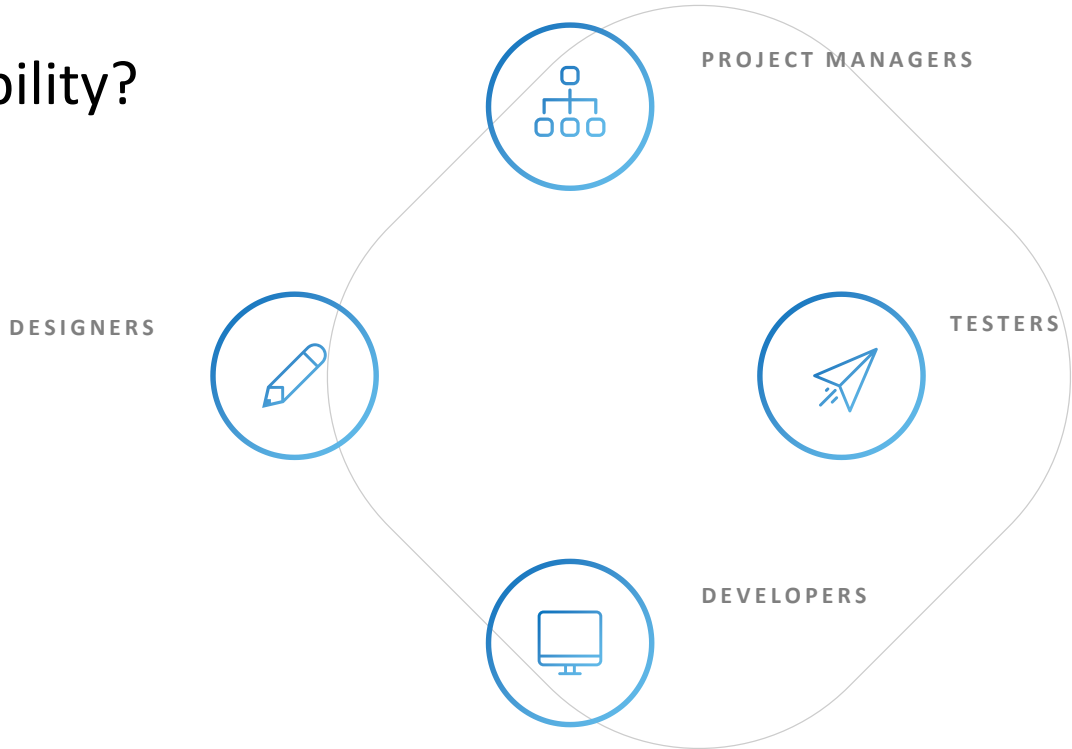
Who Is Responsible For Accessibility?



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How to Achieve Accessibility

FOLLOW STANDARDS

TALK TO OTHER PEOPLE

UNDERSTAND DIFFERENT USER AGENTS

TEST

KEEP IT SIMPLE (USE COMMON SENSE)

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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

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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

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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

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Other Standards

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

However…

- They essentially boil down to POUR and WCAG

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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

  https://developer.microsoft.com/en-us/windows/accessible-apps

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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/

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Other Accessibility Considerations

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

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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

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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.

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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

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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

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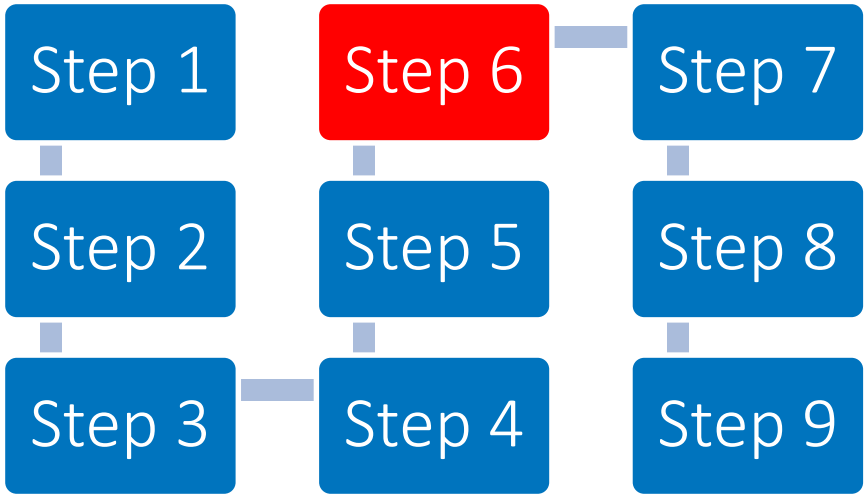
100% Accessibility

- Less than 100% is unlikely to be good enough.



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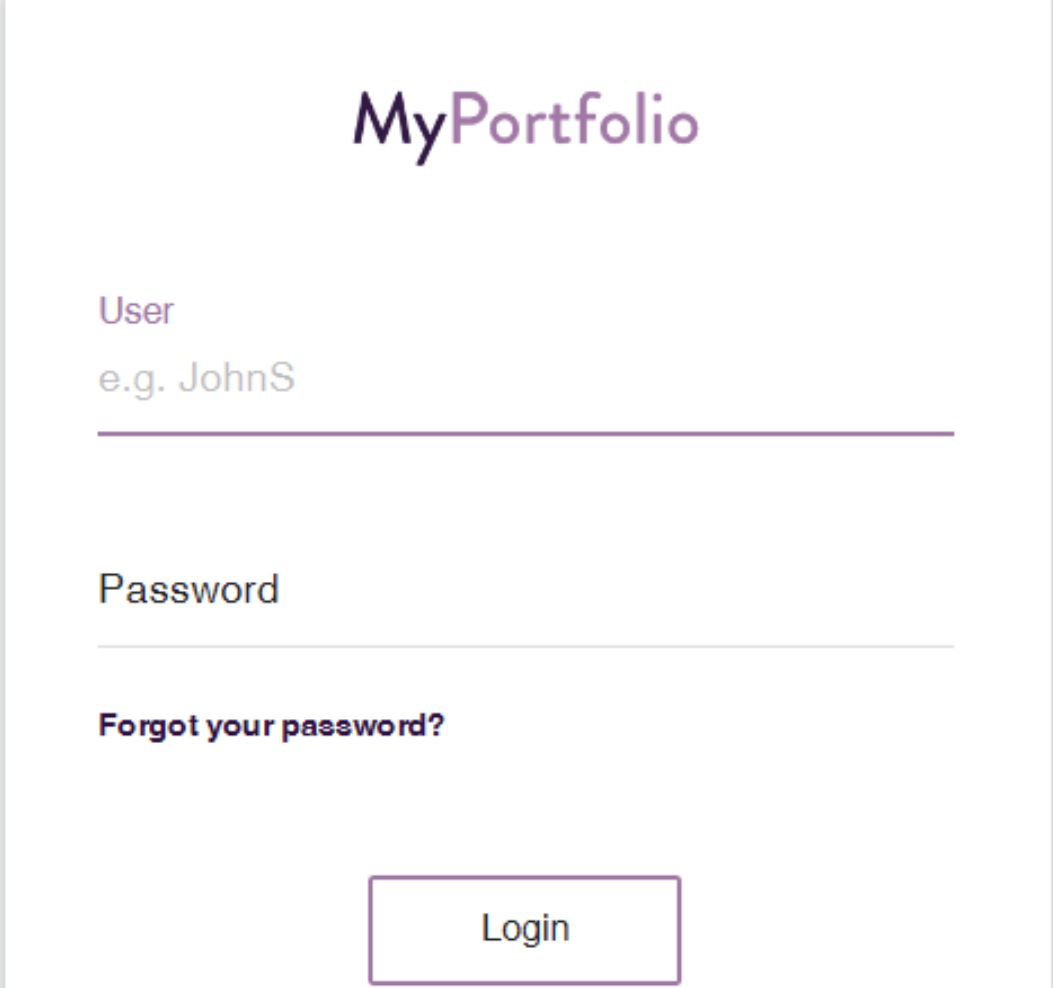

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Usability

- 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!

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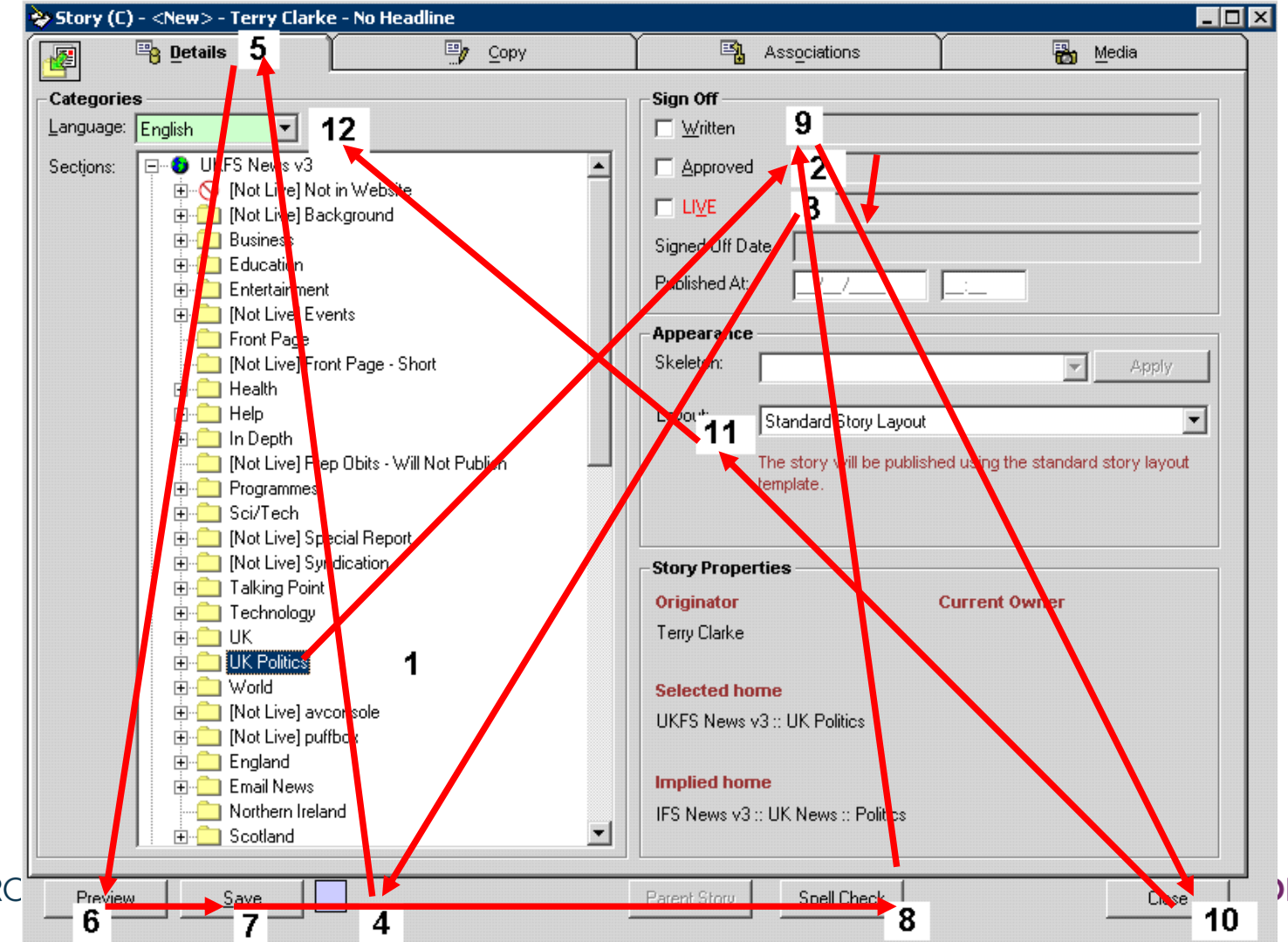
Story (C) - <New> - Terry Clarke - No Headline
Details
Copy
Associations
Media
Categories
Language: English
Sections:
UKFS News v3
[Not Live] Not in Website
[Not Live] Background
Business
Education
Entertainment
[Not Live] Events
Front Page
[Not Live] Front Page - Short
Health
Help
In Depth
[Not Live] Prep Obits - Will Not Publish
Programmes
Sci/Tech
[Not Live] Special Report
[Not Live] Syndication
Talking Point
Technology
UK
UK Politics
World
[Not Live] avconsole
[Not Live] puffbox
England
Email News
Northern Ireland
Scotland
Sign Off
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Approved
LIVE
Signed Off Date
Published At:
Appearance
Skeleton:
Apply
Layout:
Standard Story Layout
The story will be published using the standard story layout template.
Story Properties
Originator
Terry Clarke
Current Owner
Selected home
UKFS News v3 :: UK Politics
Implied home
IFS News v3 :: UK News :: Politics
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Parent Story
Spell Check
Close
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11
12

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?

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Automated Testing

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

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Assistive Technology Tools

- Screen Readers
  - Jaws
  - NVDA
  - VoiceOver, VoiceAssist
  - Narrator
  - Braille
- Magnifiers
  - Zoomtext
  - Zoom
  - Magnifier

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Assistive Technology Tools

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

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Demonstrations

- Jaws
- Dragon

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Assistive Technology Tools

- What if there are problems even with these tools?

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Snapshot
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Login
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S 1
S 2
S 3
OnAir 3000
Meter PF
Ph
48V
Input
DeEs
EQ
DYN
AUX
Mix
A B R
FDR Bus
LogInp 2
Meter AF
Meter N-X Send
GRM C/L
GRM DeEs
10
0
-10
-20
-30
-40
-50
-60
4.0k
6.0k
8.0k
10.0k
12.0k
14.0k
-1 0 .5 +1
PRG A
N-X 13
Fader Stopwatch
00:00:00
Stopwatch
00:00:00
Auto Thr
ON
Frequency
7.04 kHz
Q
1.4
Threshold
9 dB
Attenuation
0 dB

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Thank you!

Contact Information
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