Content, Context, Users, & Inclusive Design

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Learn more at: https://2019.worldidiaday.org
Content, Context, Users, and Inclusive Design

by Joshua Randall

for World Information Architecture Day

February 23, 2019
Agenda

• 5 minutes – Introduction: Who am I? Why am I here?
• 5 minutes – What are digital accessibility, inclusive design, and universal design?
• 10 minutes – the WCAG and the POUR model
• 10 minutes – the IA framework: Content, Context, Users
  • Users: the scope of disabilities and why we should care
  • Context: situational disabilities and stress cases
  • Content: still the king of the U(nderstanable) in POUR
• 5 minutes – Summary and Conclusion
• 10 minutes – Questions and Answers
Disclaimers

I represent only myself, not my employer.

I am not a lawyer.

This is an informational presentation, not a how-to.
Who am I? Why am I here?

image sources: YouTube; phelch66 on Wordpress
Who am I? (really)

• **Joshua Randall**, UX Designer, User Researcher, and Accessibility Champion at KeyBank

• Bachelor’s degree in Philosophy

• Master’s degree in UX Design from Kent State University

• 20 years as an I.T. business analyst

• Became interested in UX 5 years ago

• Focused on accessibility for 1.5 years
Why am I here?

*image source: Las Vegas Convention and Visitors Authority*
Why am I here?
Why am I here?

*image source: Lunatic Labs*
POUR meets IA – the crazy diagram

- Perceivable:
  - screen size, glare, noise
  - structure

- Operable:
  - where are you? (context of use)
  - navigation structure predictability

- Understandable:
  - even to people with mobility impairments

- Context:
  - even to people with sensory impairments

- Content

- Users

- Robust

adhering to standards ensures forwards-compatibility with future technologies
Why am I here?

+ Information Architecture

= ...
Why am I here?

*image source: Emoji Island*
What are digital accessibility, inclusive design, and universal design?

universal design

inclusive design

digital accessibility

web accessibility

ADA or 508 conformance

Source: adapted from Matt May, Adobe
What is digital accessibility?

*Digital accessibility* is the ability of a website, mobile application, or electronic document to be easily navigated and understood by a wide range of users, including those users who have visual, auditory, motor, or cognitive disabilities.

*Source: Web Accessibility Initiative*
What is inclusive design?

*Inclusive design* means design that considers the full range of human diversity with respect to ability, language, culture, gender, age, and other forms of human difference.

*Inclusive Design Principles* are about putting people first. It's about designing for the needs of people with permanent, temporary, situational, or changing disabilities.

*Source: Inclusive Design Research Centre at OCAD U; inclusivedesignprinciples.org*
Web Content Accessibility Guidelines
WCAG (Web Content Accessibility Guidelines)

Version 2.0 since 2008

Version 2.1 in June 2018

Perceivable

1.1 Text Alternatives
1.2 Time-based Media
1.3 Adaptable
1.4 Distinguishable

Operable

2.1 Keyboard Accessible
2.2 Enough Time
2.3 Seizures
2.4 Navigable
2.5 Input Modalities

Understandable

3.1 Readable
3.2 Predictable
3.3 Input Assistance

Robust

4.1 Compatible

Source: Web Accessibility Initiative
Details of the WCAG Principles

**Perceivable**  Users must be able to perceive the information and U.I. components (can’t be invisible to their senses)

**Operable**  Users must be able to operate the interface, U.I. components, and navigation

**Understandable**  Users must be able to understand the information and the U.I.

**Robust**  Users must be able to access content as tech advances (including changes in user agents and assistive technologies)

*Source: adapted from “Understanding the Four Principles of Accessibility” (WAI)*
The Information Architecture (IA) Framework

Source: Information Architecture, 4th ed.
Content, Context, Users, and Inclusive Design

Users
• the scope of disabilities
• why we should care

Context
• situational disabilities
• stress cases

Content
• the importance of structure
Users: the scope of disabilities

15.3% of United States population, or almost 50 million people
  • 6.2% have difficulty hearing or seeing
  • 2.8% have difficulty grasping objects
  • 6.3% have cognitive difficulties

Worldwide: also 15%, or over 1 billion people

Disabilities affect customers and employees

All of us will be affected eventually

Also think about temporary and situational disabilities

Sources: United States Census; World Health Organization; Bruce Tognazzini
Users: why we should care

- Accessibility is the **right thing** to do.
- Accessibility **improves your brand**.
- Accessibility is a **quality** issue.
- Accessibility affects your **business-to-business** work.
- Accessibility helps with **search engine optimization**.
- Accessibility **supports low-bandwidth users**.
- Accessibility **reduces legal risk**.

**Sources:** Karl Groves; Seyfarth Shaw; David Berman; International Telecommunications Union; Jupiter Research; American Federation for the Blind
### Context: situational disabilities

<table>
<thead>
<tr>
<th></th>
<th>Permanent</th>
<th>Temporary</th>
<th>Situational</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Touch</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One arm</td>
<td>Arm injury</td>
<td>New parent</td>
<td></td>
</tr>
<tr>
<td><strong>See</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blind</td>
<td>Cataract</td>
<td>Distracted driver</td>
<td></td>
</tr>
<tr>
<td><strong>Hear</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf</td>
<td>Ear infection</td>
<td>Bartender</td>
<td></td>
</tr>
<tr>
<td><strong>Speak</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-verbal</td>
<td>Laryngitis</td>
<td>Heavy accent</td>
<td></td>
</tr>
</tbody>
</table>

-or anyone in bright sunlight

-or anyone who needs to keep their volume down

*Source*: Microsoft inclusive design toolkit
**Context: technology… assistive technology (AT)**

<table>
<thead>
<tr>
<th><strong>Software</strong></th>
<th><strong>Hardware</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Screen Readers (Text-to-Speech)</td>
<td>• Keyboards</td>
</tr>
<tr>
<td>• Voice Recog. (Speech-to-Text)</td>
<td>• Mice &amp; Pointing Devices</td>
</tr>
<tr>
<td>• Screen Magnifiers (virtual)</td>
<td>• Headsets, Mics &amp; Recording Devices</td>
</tr>
<tr>
<td>• Ergonomic Aids to avoid Repetitive Strain Injury (RSI)</td>
<td>• Equipment to support hearing impaired users (for F2F mtgs)</td>
</tr>
<tr>
<td>• Mind Mapping &amp; Org. Aids</td>
<td>• Screen Magnifiers (physical)</td>
</tr>
<tr>
<td>• Proofing Tools, Note-taking, and Literacy Aids</td>
<td>• Large monitors and monitor arms</td>
</tr>
<tr>
<td>• Optical Character Recog. (OCR)</td>
<td>• Ergonomic Support Equipment</td>
</tr>
<tr>
<td>• Software for creating Braille</td>
<td>• Braille Devices</td>
</tr>
<tr>
<td>• Software for creating and reading sound files</td>
<td>• Scanners</td>
</tr>
<tr>
<td></td>
<td>• Personal printers</td>
</tr>
<tr>
<td></td>
<td>• Hardware specifically to enable a user to work while out of office</td>
</tr>
</tbody>
</table>
Context: technological constraints example
Context: stress cases

• Stress eats cognitive resources

• Everyday and mundane stress
  • running late
  • technical failures

• Stress cases, not edge cases
  • because edges can be ignored “for now” (which turns into “for ever”)

Source: *Design for Real Life*, by Eric Meyer and Sarah Wachter-Boettcher
Content: still the king of the U in POUR

- Plain language

- Structure

- HTML <title>s, <h>eadings for semantics, never for style
Content: example of good structure

We have been celebrating World Information Architecture Day since 2012 and our celebrations grow every year. Each year locations around the world curate content based on a global theme.

2012: Designing Structures for Understanding
2013: Exploring and expanding the ontologies of information architecture.
2014: Making the World a Better Place Through Information Architecture
2015: Architecting Happiness
2016: Information Everywhere, Architects Everywhere
2017: Information Strategy & Structure
2018: IA for Good
2019: Design for Difference

Source: World IA Day Years & Themes page
Content: landmark regions

actual webpage
(HTML + CSS)

Source: www.html5accessibility.com/tests/roles-land.html
Summary and Conclusion
POUR meets IA – the crazy diagram, redux

Perceivable

- screen size, glare, noise
- structure

Operable

- where are you? (context of use)
- navigation structure predictability

Understandable

- even to people with sensory impairments
- even to people with mobility impairments

Context

Content

Users

Robust

adhering to standards ensures forwards-compatibility with future technologies
Accessibility is the right thing to do and part of quality.

Inclusive design means we put people first and consider the range of human diversity when designing.

Make your information and content **Perceivable**, **Operable**, **Understandable**, and **Robust**.

For best IA results, blend WCAG’s POUR with **Content**, **Context** (of use), and **Users**.
Questions and Answers
Stuff to Jot Down While I Take Questions

the Web Accessibility Initiative (WAI) website, w3.org/WAI

Cleveland Accessibility Meetup website, A11yCLE.com

book recommendations
  • Accessibility for Everyone, Laura Kalbag (2017, A Book Apart)
  • A Web for Everyone, Sarah Horton and Whitney Quesenbery (2014, Rosenfeld)
  • Inclusive Design Patterns, Heydon Pickering (2016, Smashing Magazine)

Twitter hashtag #a11y (because there are 11 letters between ‘a’ and ‘y’ in ‘accessibility’)

Many free webinars from the top consultancies:
  • Deque Systems
  • Level Access
  • The Paciello Group
  • Tenon
from the home office in Shaker Heights, Ohio:
Top 10 A11y Things
(not on the W3C websites)

1. inclusive-components.design
2. BBC’s Mobile Accessibility Guidelines
3. WebAIM (Accessibility In Mind) and their mailing list archive
4. Twitter #a11y
5. Deque Systems
6. Level Access / Simply Accessible
7. The Paciello Group (TPG) / Interactive Accessibility (IA)
8. Tenon.io and Karl Groves’ blog
9. NVDA screen reader (free, Windows) / VoiceOver (free, iOS)
10. WAVE tool
Name Dropping
in no particular order

- **Steve Faulkner** (TPG, Technical Director)
- **Léonie Watson** (consultant; formerly TPG, Dir. of Communication)
- **Henny Swan** (TPG, author)
- **Heydon Pickering** (consultant)
- **Dennis Lembrée** (consultant; Deque; WebAxe)
- **Jennie Lay-Flurrie** (Microsoft, Chief Accessibility Officer)
- **Karl Groves** (consultant, Tenon founder)
- **Adrian Roselli** (consultant)
- **Lainey Feingold** (lawyer, author)
- **David Berman** (consultant)
Contact Me

Joshua Randall on…

- email: joshua.randall@gmail.com
- LinkedIn: linkedin.com/in/joshua-randall-3931257
- Twitter: @jrAccessibility (I mostly lurk)

My websites:
  - A11yCLE.com
  - JoshuaRandallUXD.wordpress.com

My groups:
  - Cleveland Accessibility Meetup (#A11yCLE)
  - UXPA Cleveland
Appendix - more POUR information
WCAG: P for Perceivable

Perceivable

• Available to the senses (primarily vision and hearing) either through browser, or through assistive technologies (screen readers, magnifiers, etc.)

What To Do

• Text alternatives for images
• Captions and transcripts for video / audio
• Present content in different ways
• Design with proficient color contrast
• Avoid unnecessary movement or distractions
WCAG: O for Operable

Operable

- Users can interact with all controls and interactive elements using either mouse, keyboard, or AT.

What To Do

- All functionality available through keyboard
- User-controlled timing and limits
- Don’t cause seizures (don’t flash > 3 / sec)
- Multiple ways to determine where you are, to navigate, and to find content
WCAG: U for Understandable

Understandable

• Content is clear, unambiguous, and not confusing.

What To Do

• Use plain language ("writesppeak")
• Supplement text with illustrations, videos, etc.
• Consistent, obvious navigation and structure
• Pages operate in predictable ways
• Help users avoid and correct mistakes
WCAG: R for Robust

Robust

• Wide range of technologies can access the content (including both old and new UAs and ATs).

What To Do

• Provide name, role, value, and state for non-standard user interface components
• Adhere to W3C standards
• Use semantic markup
• Use progressive enhancement
POUR meets IA – the crazy diagram

Perceivable

Operable

Understandable

Context

Content

Users