Through a different lens

Sarah Pulis, Head of Accessibility Services

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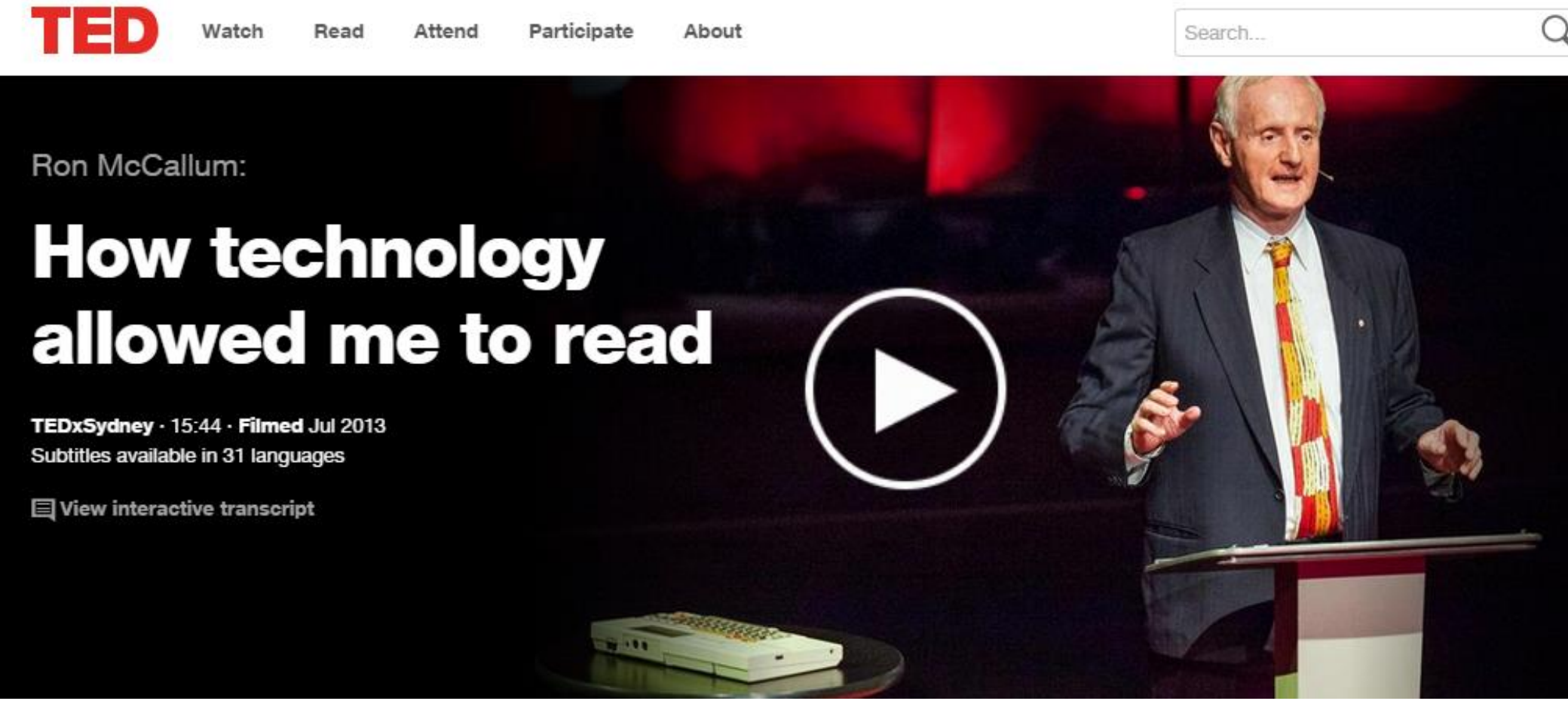
'the armenian mob' by bpmwilmson on Flickr (via Sarah), CC BY licence

Happy Global Accessibility Awareness Day

(for yesterday)


TED
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Ron McCallum:
How technology allowed me to read
TEDxSydney · 15:44 · Filmed Jul 2013
Subtitles available in 31 languages
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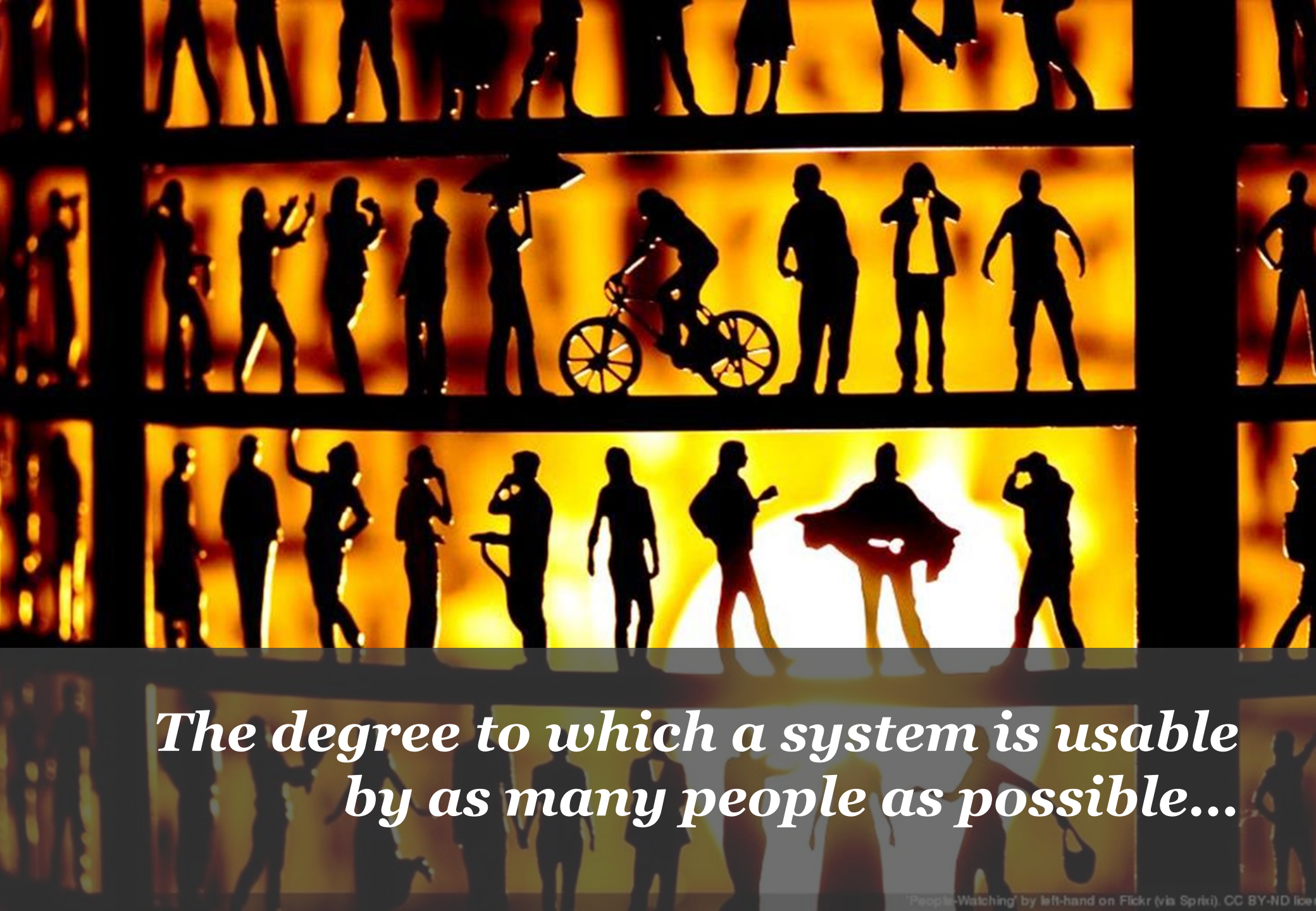
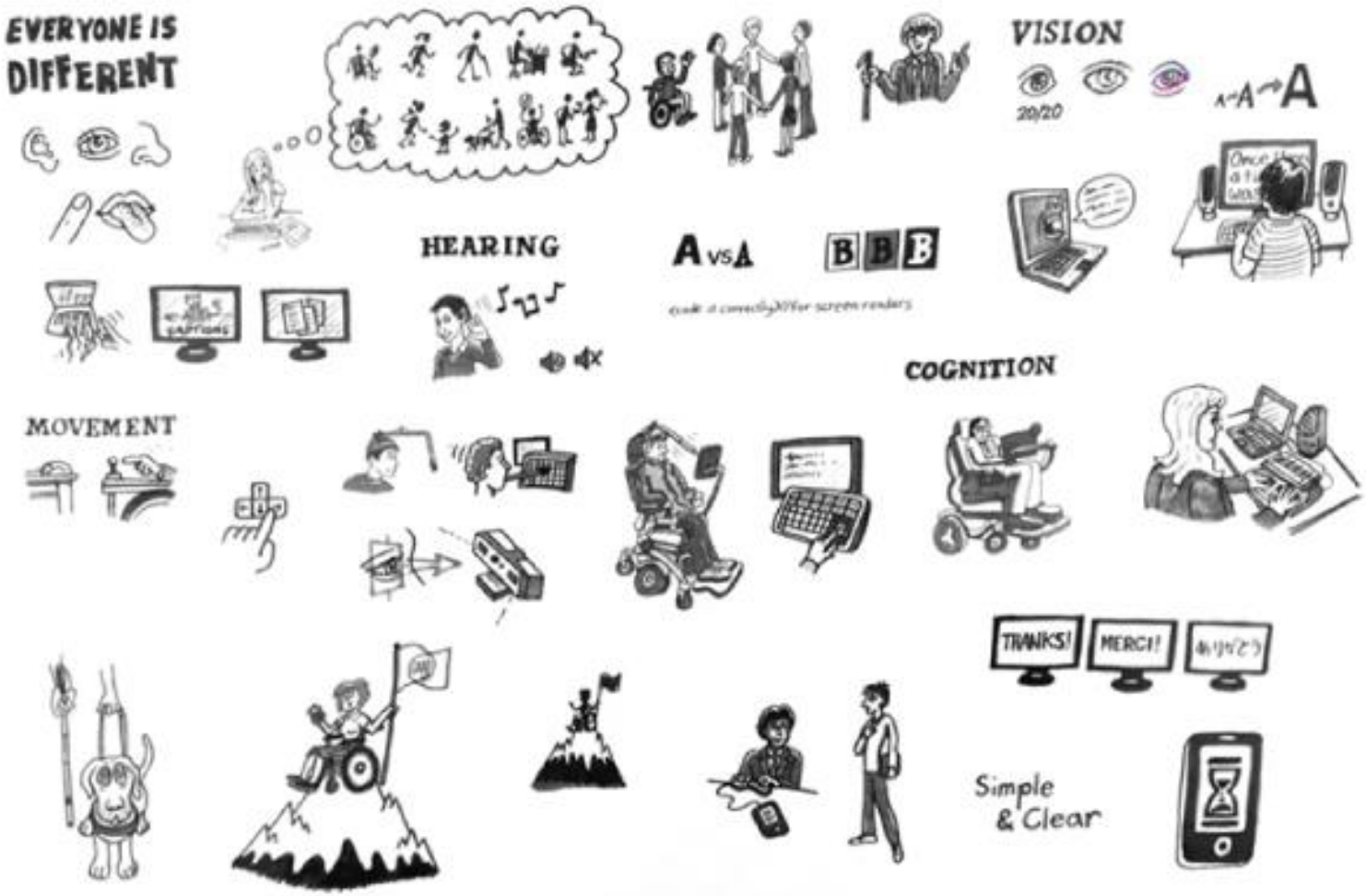


'People-Watching' by left-hand on Flickr (via Sprixi). CC BY-ND lice


EVERYONE IS DIFFERENT
VISION
20/20
HEARING
A vs A
B B B
COGNITION
MOVEMENT
THANKS!
MERCI!
Simple & Clear

Accessibility Landscape

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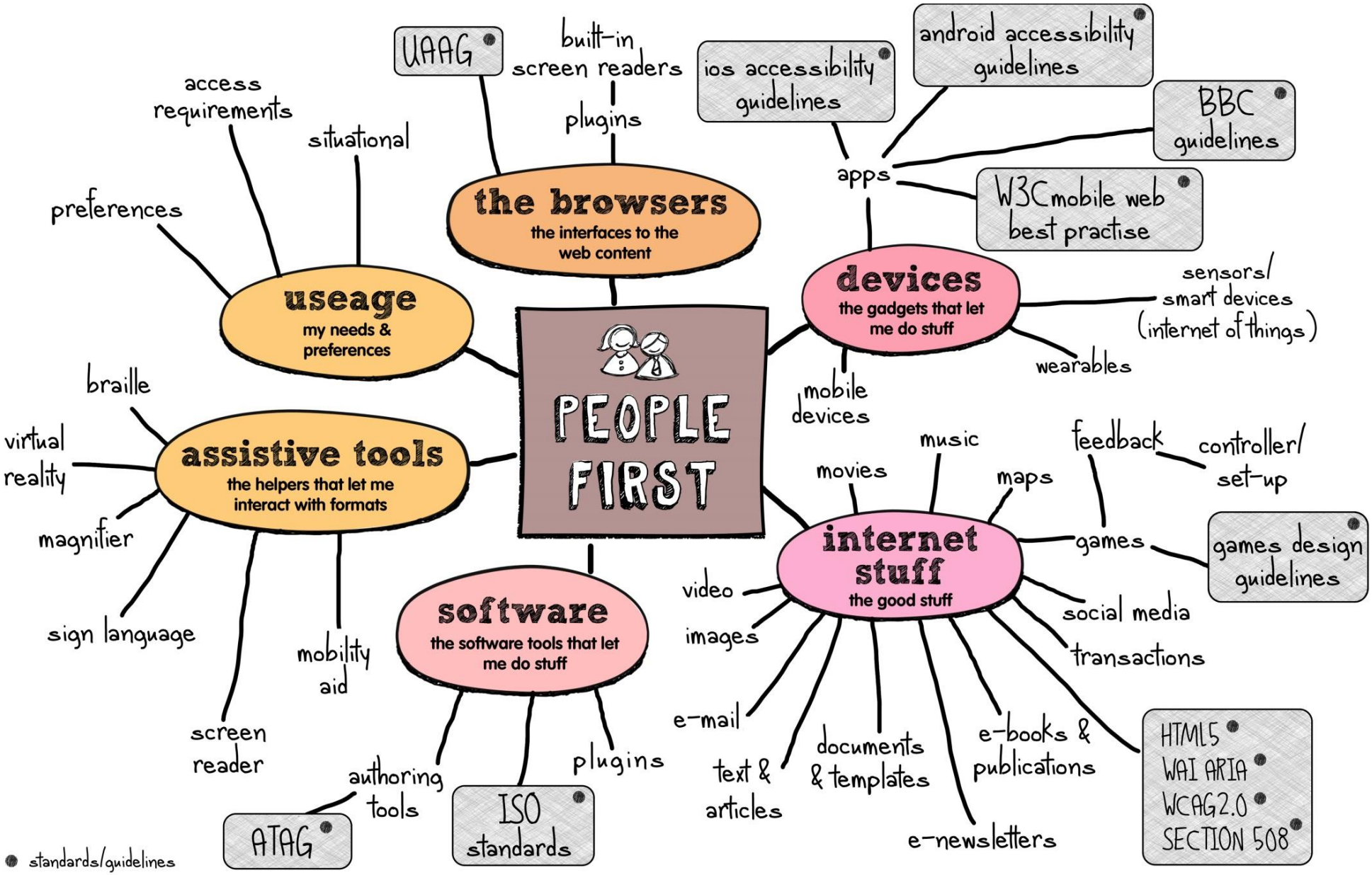
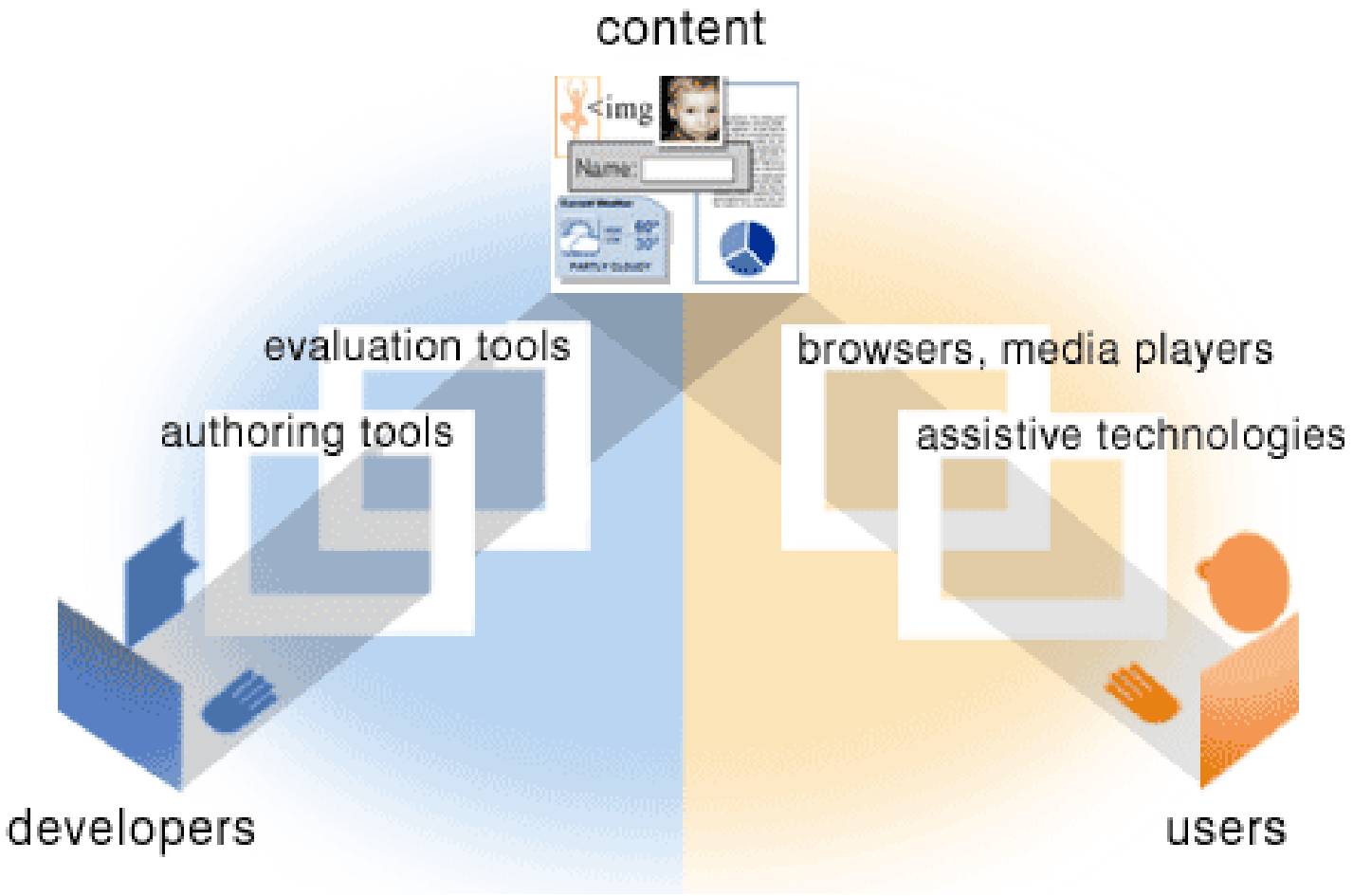


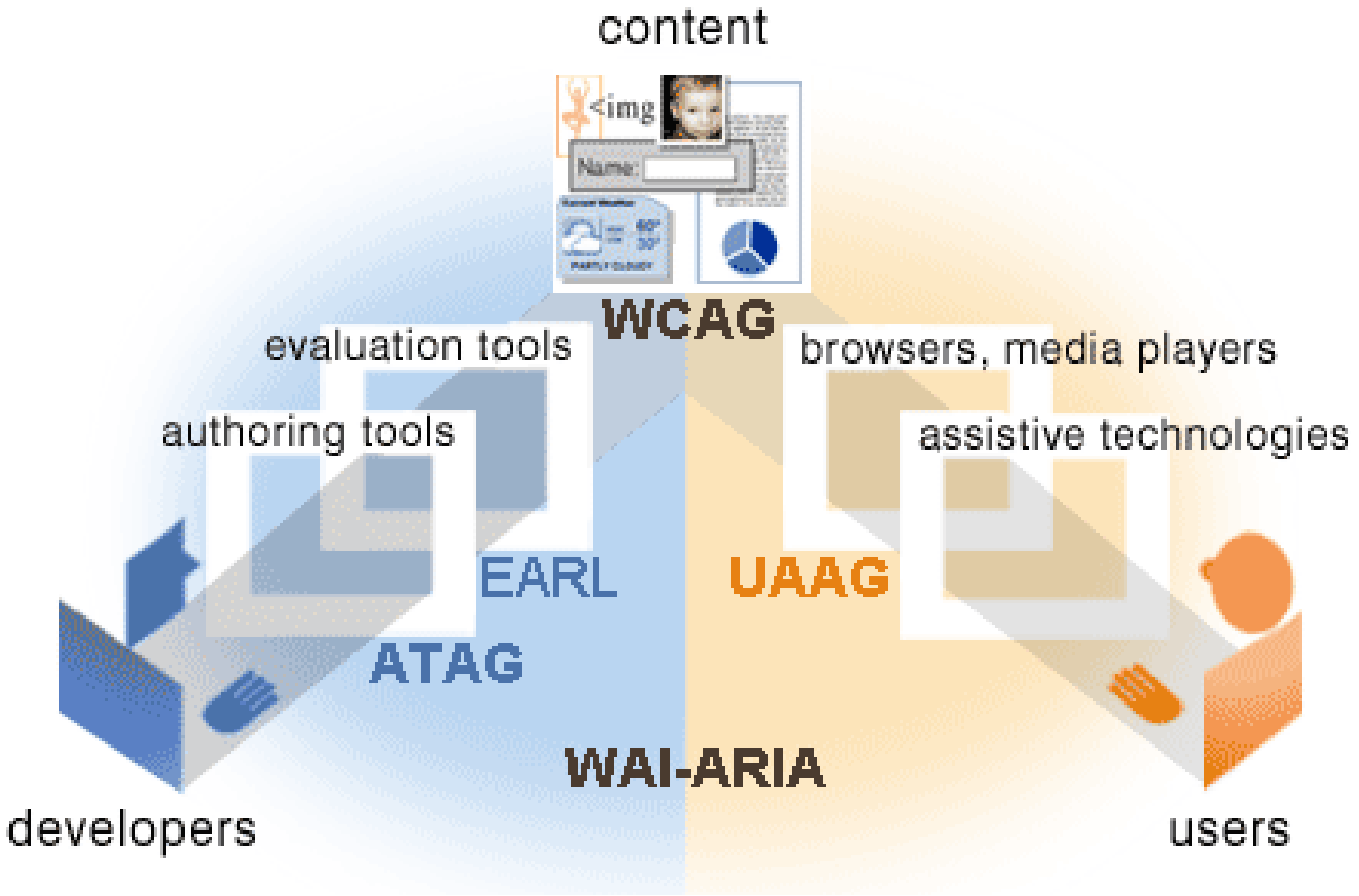
It's also the law

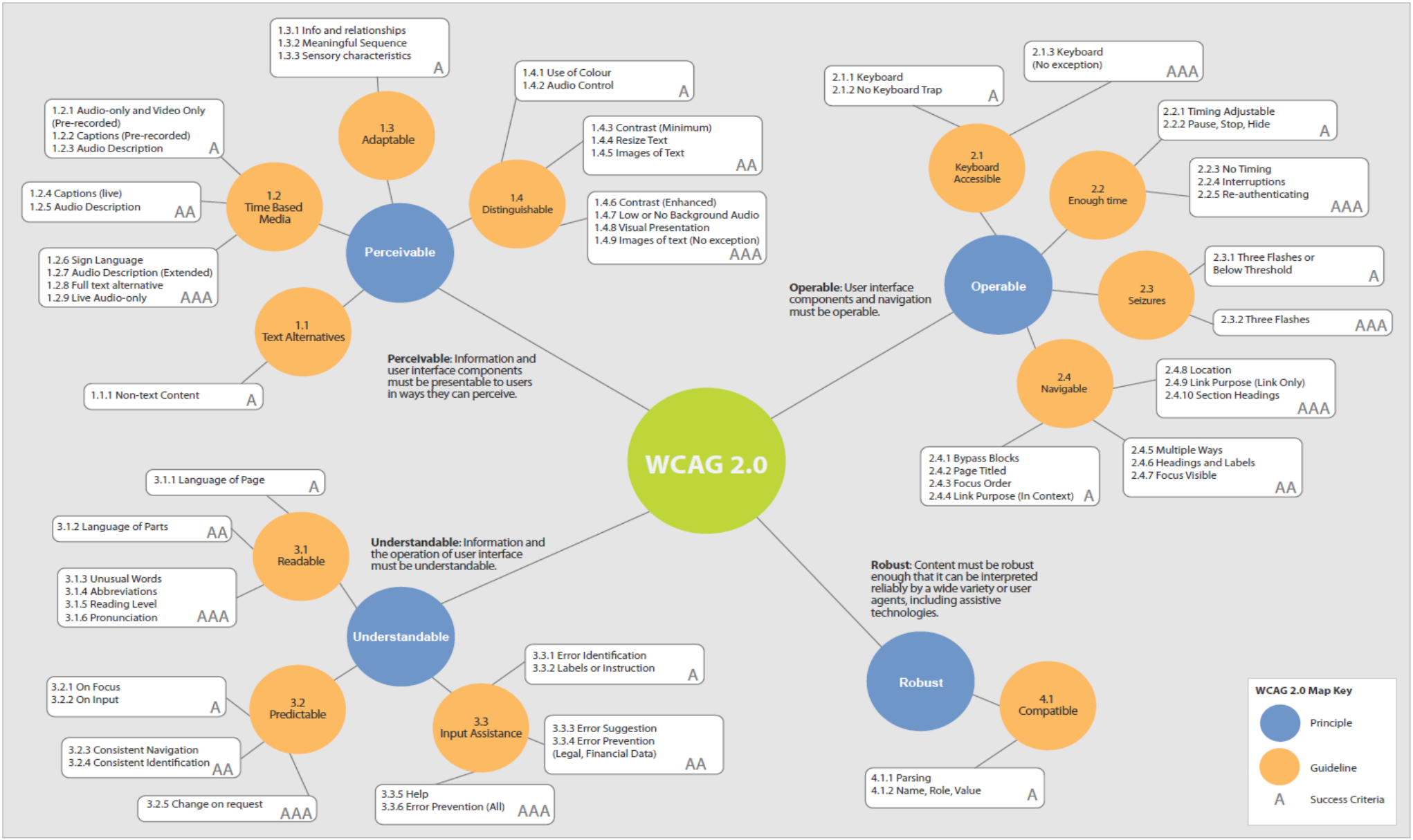
Standards

Components of accessibility



Accessibility guidelines





Visual map of Web Content Accessibility Guidelines 2.0
Designed by **Stamford Interactive** www.stamfordinteractive.com.au

Based on World Wide Web Consortium documentation available at www.w3.org/TR/WCAG20

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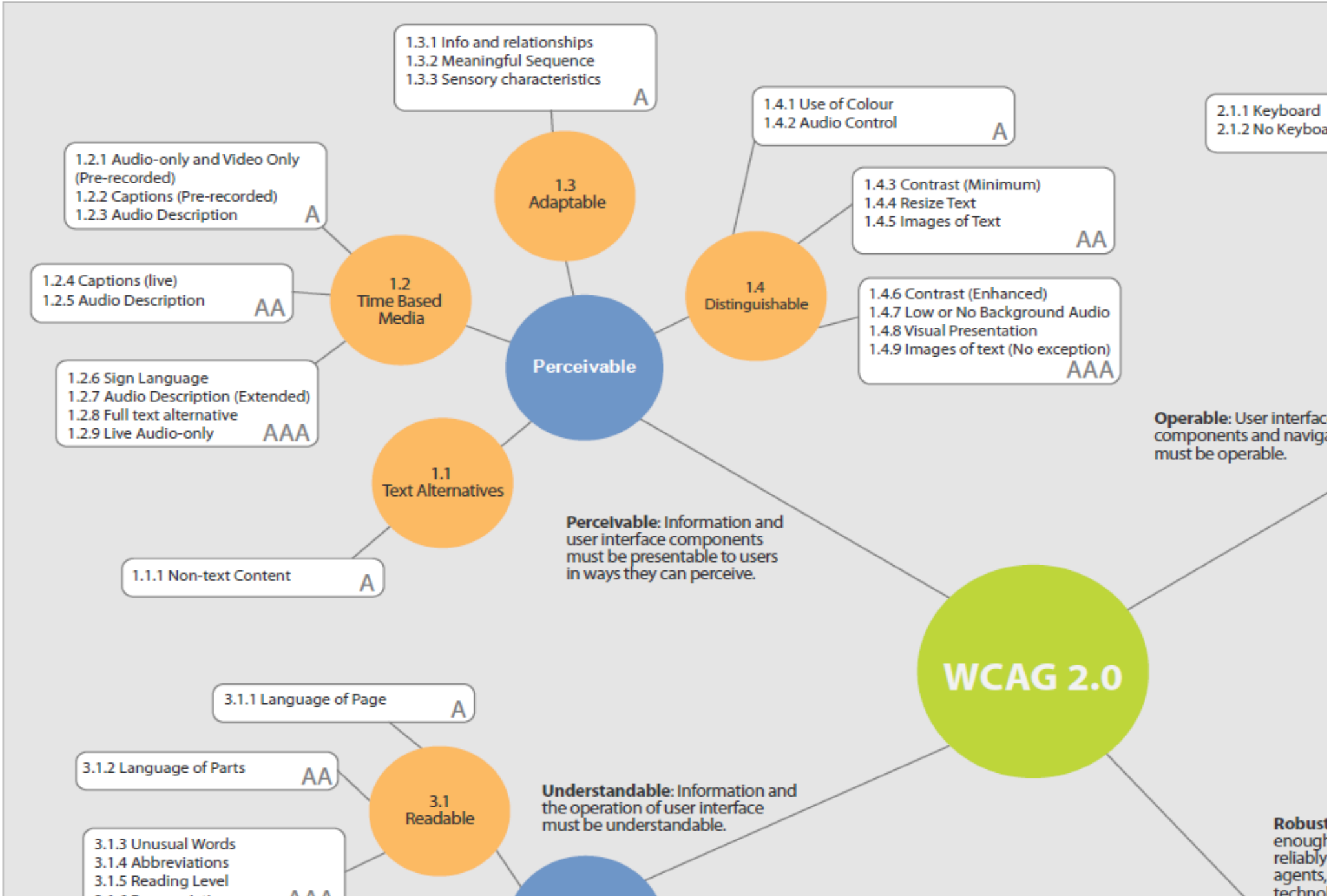
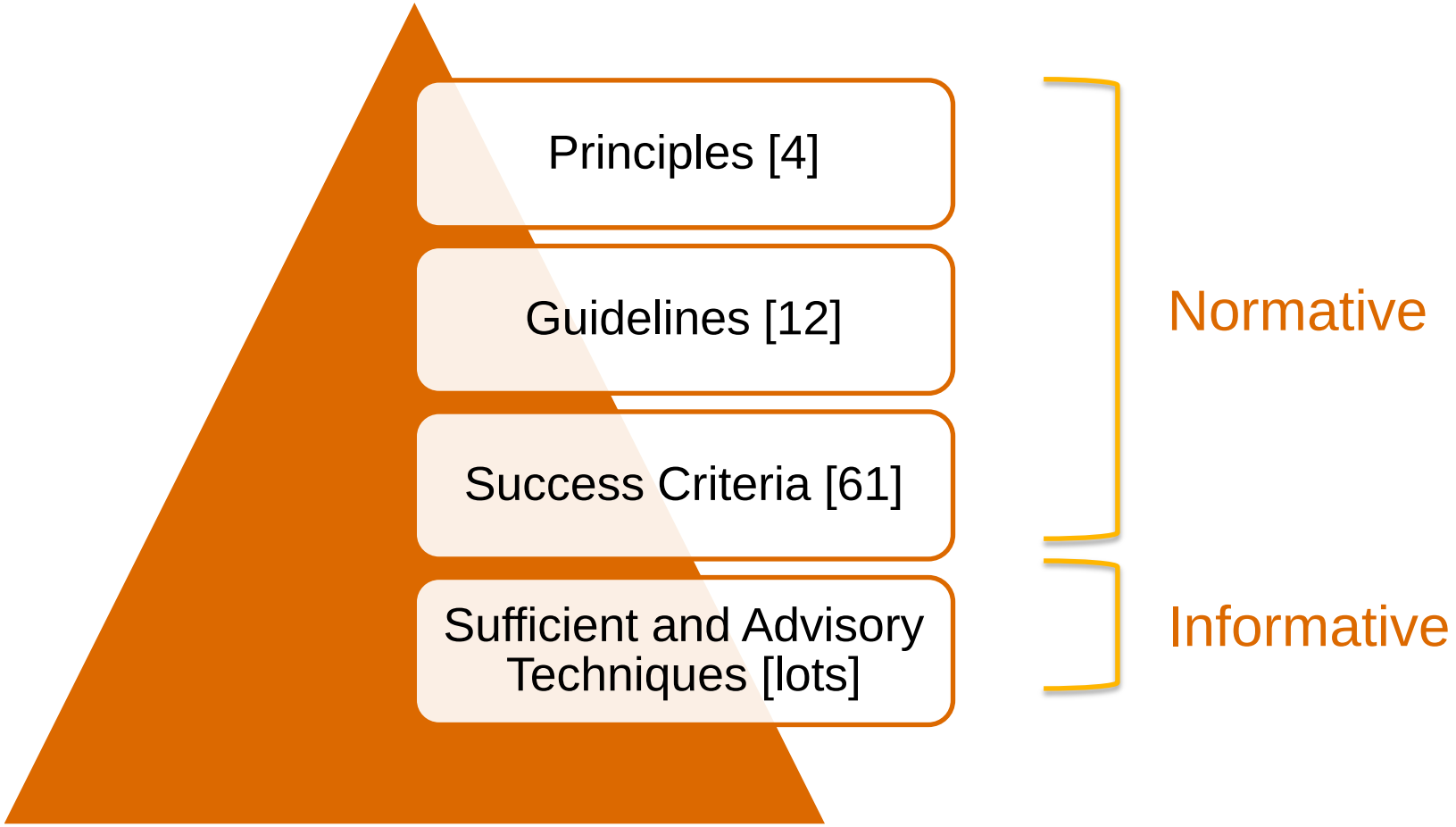
WCAG 2.0 Map V1.3 © 2011Stamford Interactive


WCAG 2.0
Perceivable
Perceivable: Information and user interface components must be presentable to users in ways they can perceive.
1.1 Text Alternatives
1.1.1 Non-text Content A
1.2 Time Based Media
1.2.1 Audio-only and Video Only (Pre-recorded)
1.2.2 Captions (Pre-recorded)
1.2.3 Audio Description A
1.2.4 Captions (live)
1.2.5 Audio Description AA
1.2.6 Sign Language
1.2.7 Audio Description (Extended)
1.2.8 Full text alternative
1.2.9 Live Audio-only AAA
1.3 Adaptable
1.3.1 Info and relationships
1.3.2 Meaningful Sequence
1.3.3 Sensory characteristics A
1.4 Distinguishable
1.4.1 Use of Colour
1.4.2 Audio Control A
1.4.3 Contrast (Minimum)
1.4.4 Resize Text
1.4.5 Images of Text AA
1.4.6 Contrast (Enhanced)
1.4.7 Low or No Background Audio
1.4.8 Visual Presentation
1.4.9 Images of text (No exception) AAA
Understandable: Information and the operation of user interface must be understandable.
3.1 Readable
3.1.1 Language of Page A
3.1.2 Language of Parts AA
3.1.3 Unusual Words
3.1.4 Abbreviations
3.1.5 Reading Level
Operable: User interfac components and naviga must be operable.
2.1.1 Keyboard
2.1.2 No Keyboa
Robust enough reliably agents, techno

Sufficient techniques



Info and Relationships

1.3.1 Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text. *(Level A)* Understanding Success Criterion 1.3.1

Sufficient Techniques for 1.3.1 - Info and Relationships (for the technologies you checked above)

Note: Other techniques may also be sufficient if they meet the success criterion.

Situation A: The technology provides semantic structure to make information and relationships conveyed through presentation programmatically determinable:

1. G115: Using semantic elements to mark up structure **AND** H49: Using semantic markup to mark emphasized or special text (HTML)
2. G117: Using text to convey information that is conveyed by variations in presentation of text
3. G140: Separating information and structure from presentation to enable different presentations
4. Making information and relationships conveyed through presentation programmatically determinable using the following techniques:
   - G138: Using semantic markup whenever color cues are used
   - H51: Using table markup to present tabular information (HTML)
   - H39: Using caption elements to associate data table captions with data tables (HTML)
   - H73: Using the summary attribute of the table element to give an overview of data tables (HTML)
   - H63: Using the scope attribute to associate header cells and data cells in data tables (HTML)
   - H43: Using id and headers attributes to associate data cells with header cells in data tables (HTML)
   - H44: Using label elements to associate text labels with form controls (HTML)
   - H65: Using the title attribute to identify form controls when the label element cannot be used (HTML)
   - H71: Providing a description for groups of form controls us
   - H85: Using OPTGROUP to group OPTION elements insid
   - H48: Using ol, ul and dl for lists or groups of links (HTML)
   - H42: Using h1-h6 to identify headings (HTML)

Situation B: The technology in use does NOT provide the semantic stru programmatically determinable:

1. G117: Using text to convey information that is conveyed by variat
2. Making information and relationships conveyed through presentat
   - T1: Using standard text formatting conventions for paragra
   - T2: Using standard text formatting conventions for lists (Te
   - T3: Using standard text formatting conventions for heading

As a screen reader user, I want to know what the column and row headers for each table cell so that I can understand the meaning of the data.

Testing method

1. Define the Evaluation Scope
2. Explore the Target Website
3. Select a Representative Sample
4. Audit the Selected Sample
5. Report the Evaluation Findings

Website Accessibility Conformance Evaluation Methodology (WCAG-EM) 1.0

01 *Automated testing*

Definitively test for approximately 25% of accessibility issues for Level A and 17% for Level AA

Approximately 30% can be tested for but requires human verification

The rest can only be tested manually by a human.

Web Accessibility Testing: What Can be Tested and How, Karl Groves

Does an image have an alt attribute

Are you annoying the user by repeating everything twice

Does the alt text describe the image

```
<img alt="Go behind-the-scenes and meet New Zealand's national icon, the kiwi. As part of the Operation Nest E" …>
```

Some tools to try

Free browser tools

- Web Accessibility Toolbar (IE)
- Web Developer Toolbar (Firefox)
- Fire eyes (Firefox)

Free automated tools

- WAVE from WebAIM (toolbar and online)
- aChecker

Some tools to buy

Continuous Integration

- Tenon.io (free and paid)

Commercial tools

- Sortsite
- Compliance Sherriff
- Active Standards
- Fire eyes (paid)

02 *Manual testing*

Critical for identifying issues that cannot be identified via automated testing.

Can include code inspection, changes to software (e.g. high contrast, text resize), assistive technologies (e.g. screen reader or speech recognition software), keyboard access.

Assistive technologies

- Windows
  - JAWS with IE at a minimum
  - NVDA with Firefox at a minimum
- Mac OS X and iOS
  - VoiceOver with Safari
- Android
  - Talkback with Firefox

“Note that even content that conforms at the highest level (AAA) will not be accessible to individuals with all types, degrees, or combinations of disability, particularly in the cognitive language and learning areas”

- W3C

Toilet Door Status
Door Unlocked When Lit
Door Locked When Lit

03 *Usability testing*

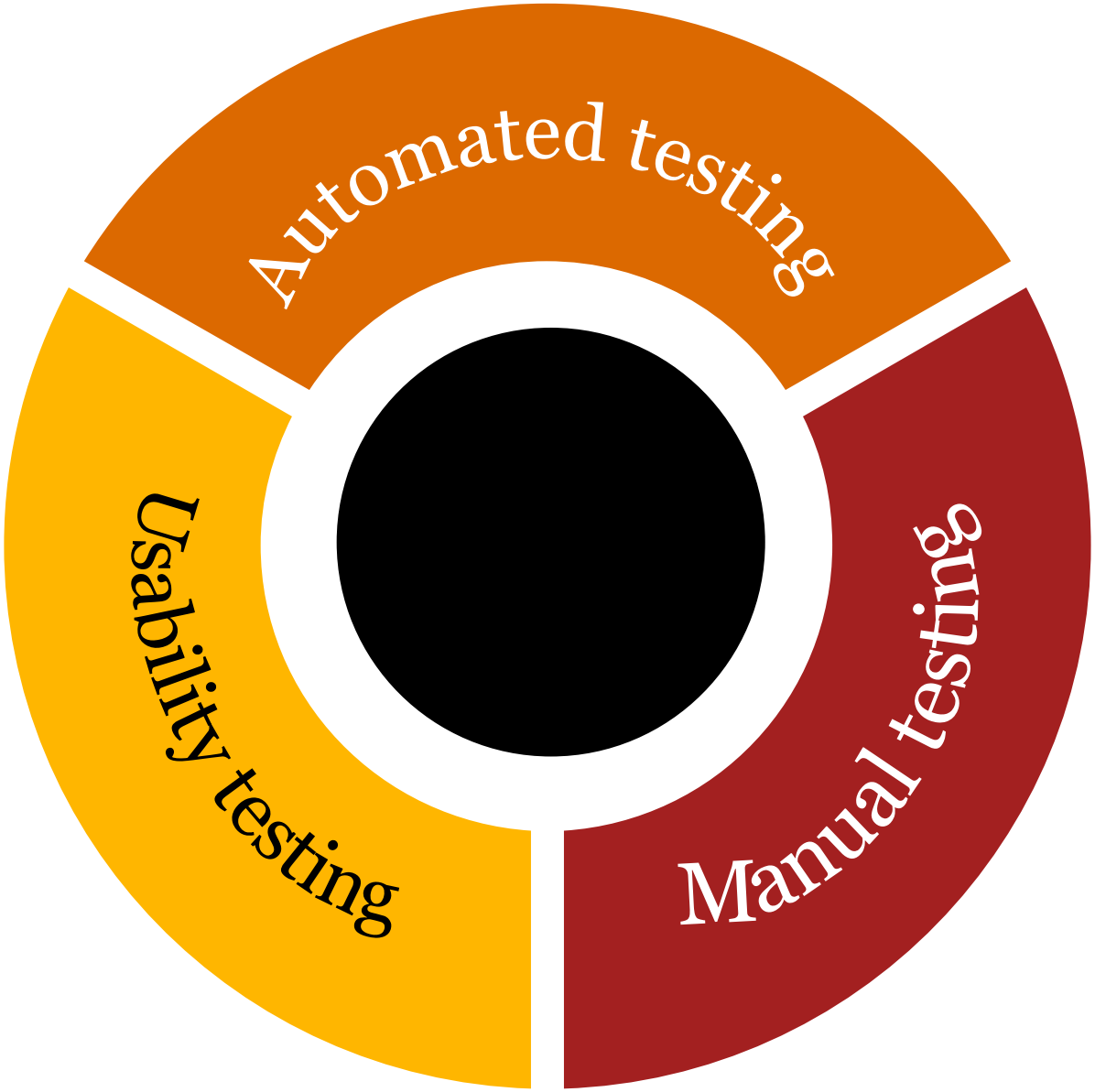
Shows the true experience of the user. How easy or hard is it for a user to complete a task?

Best done once all technical accessibility issues have been addressed for most meaningful results.

03 *Usability testing*

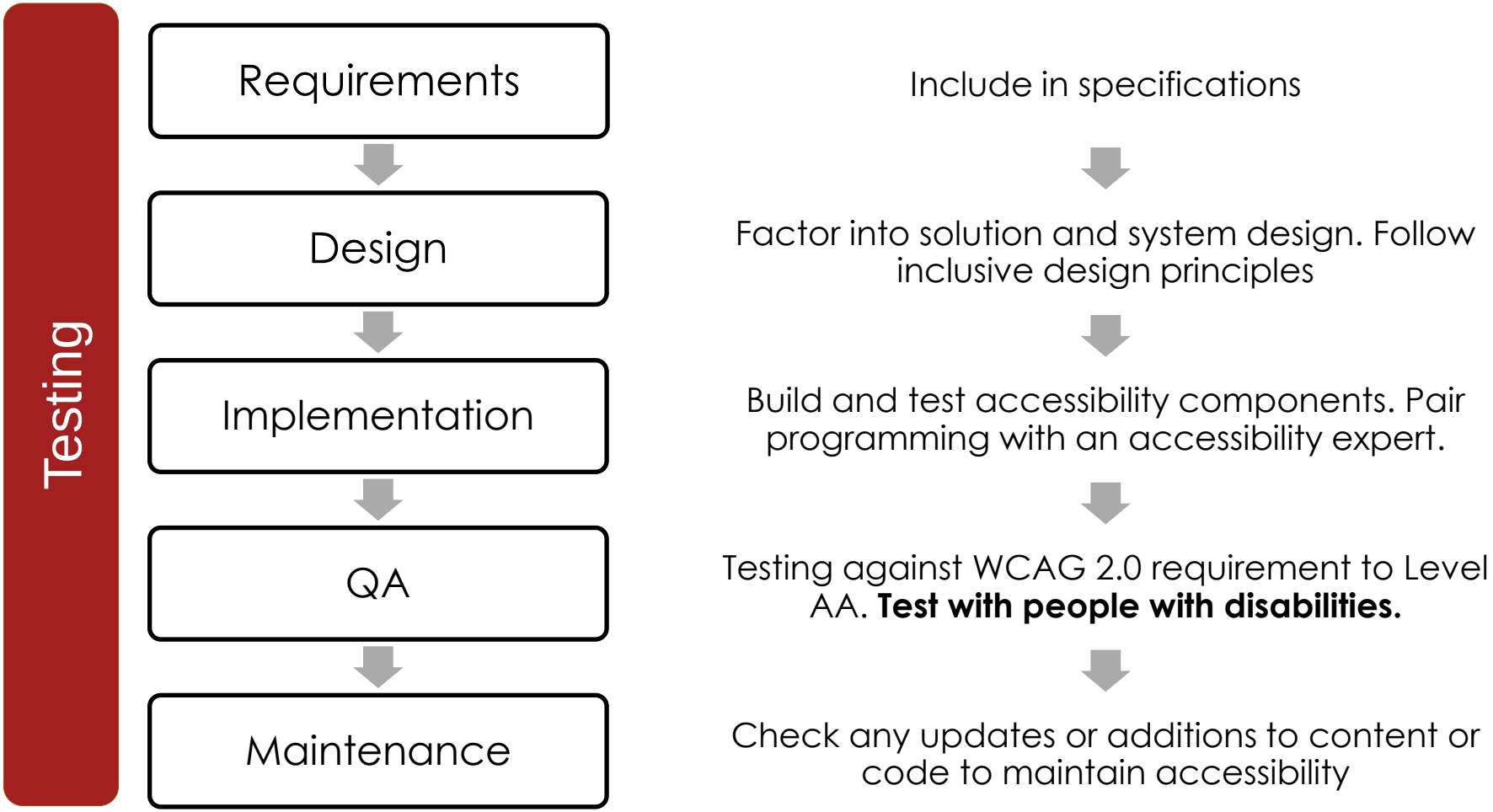
A few tips

- Ensure you have a range of users who use different strategies and who have different technical literacy
- What's there technical setup? If they are coming to you, is your venue accessible?


Automated testing
Manual testing
Usability testing

Remediating issues once an application has been developed is a lot more costly than integrating accessibility in the system development lifecycle

Systems Development Life Cycle



Accessibility Responsibility Breakdown

W3C WAI-Engage community group

Accessibility Spot Check

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- ✔ ***Skip links:*** Include skip links in your wireframe
- ✔ ***Headings:*** Use headings correctly (h1>h6)
- ✔ ***Fields:*** Label fields clearly, provide examples of field formats to minimise input errors and give clear error feedback
- ✔ ***Hypertext:*** Make hypertext links clear, concise and informative
- ✔ ***Movement:*** Avoid flashing movement and animations
- ✔ ***Stop/pause:*** If an element moves on its own, provide a way to turn it off or pause it
- ✔ ***Text Equivalent:*** If any element has video or audio, indicate how text equivalents can be displayed
- ✔ ***Reading order:*** Make sure the reading order of the page makes sense

☐ Check accessibility

- ✔ ***Personas:*** Consider inclusive personas
- ✔ ***Inclusive:*** Consider including users with impairments in user research

☐ Check accessibility

start

research
getting to know your users

define
IA/wireframes

design
conceptual/high fidelity mockups

- ✔ ***Contrast:*** Ensure your text and backgrounds have good contrast
- ✔ ***Graphic text:*** Use graphic text in moderation and ensure it is used with good contrast and clear fonts
- ✔ ***Navigaton:*** Provide consistent navigation that clearly indicates where a user is within a system
- ✔ ***Colour:*** Ensure you don't use colour as the only way to convey information
- ✔ ***Icons:*** Use icons to supplement text that are consistent, easy to see and intuitive
- ✔ ***Balance:*** Ensure your typography is clear, scannable and uses white space effectively

☐ Check accessibility

UX PROCESS

deliver
prototype/ development

- ✔ ***Keyboard access:*** Ensure all functionality on a page works by keyboard and touch
- ✔ ***Focus order:*** Ensure the focus order of links is visible, logical and intuitive
- ✔ ***Alt text:*** Ensure alt text is clear, concise and descriptive
- ✔ ***Forms:*** Ensure all forms work with assistive technologies in the way the user needs them to
- ✔ ***Tables:*** Code column headings in data tables with the table header <th> element

☐ Check accessibility

test
evaluating the design

- ✔ ***Inclusive:*** User test with participants with impairments - including older people

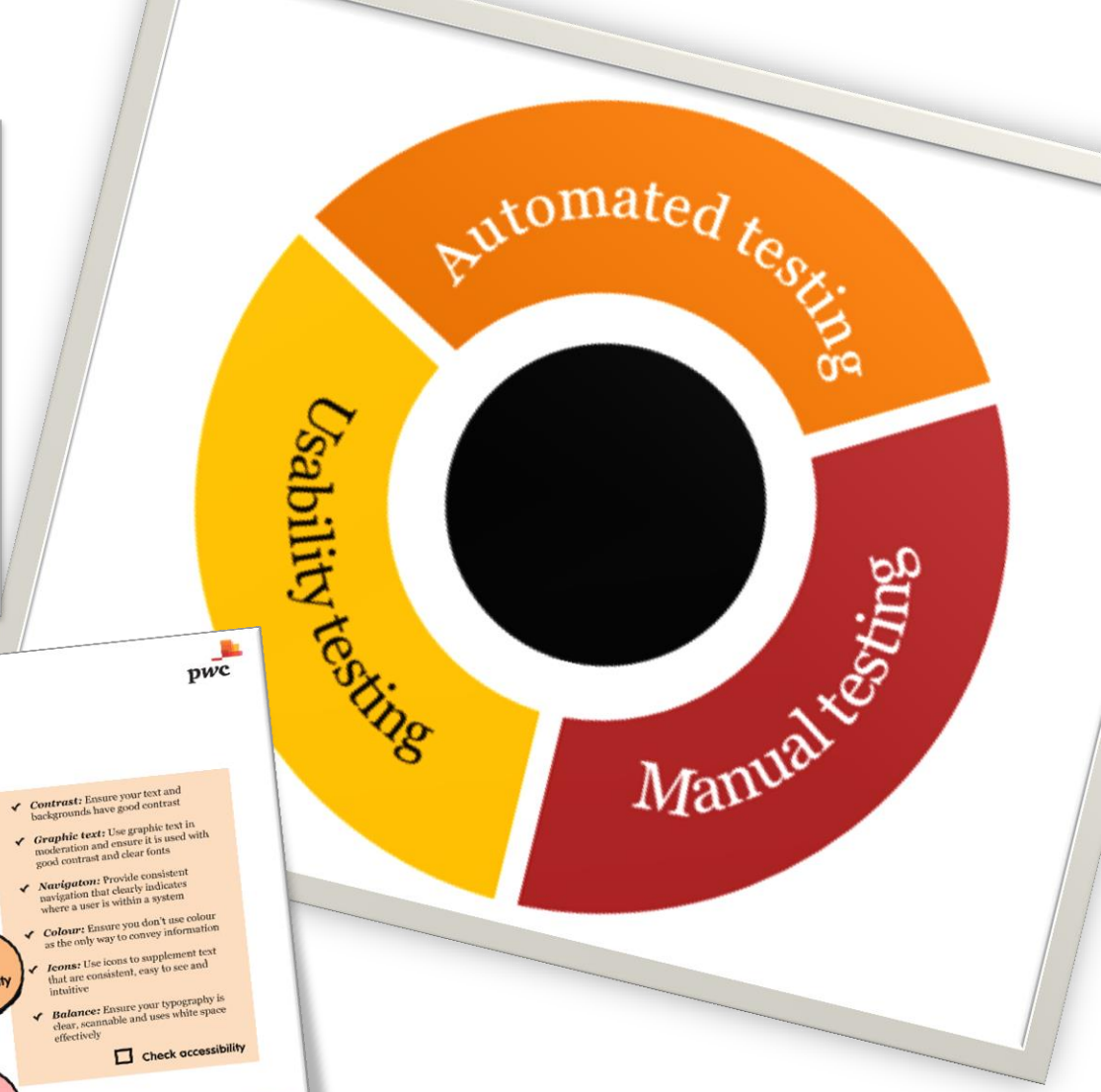
☐ Check accessibility

finish

maintain
post release

- ✔ ***Accessibility policy:*** Check what hasn't been implemented and pinpoint a release where the fixes can be included
- ✔ ***Accessibility statement:*** Update accessibility statement(s) to indicate what works and what's coming soon
- ✔ ***Updates:*** Ensure all updates, including new content & features maintain accessibility

☐ Check accessibility


Automated testing
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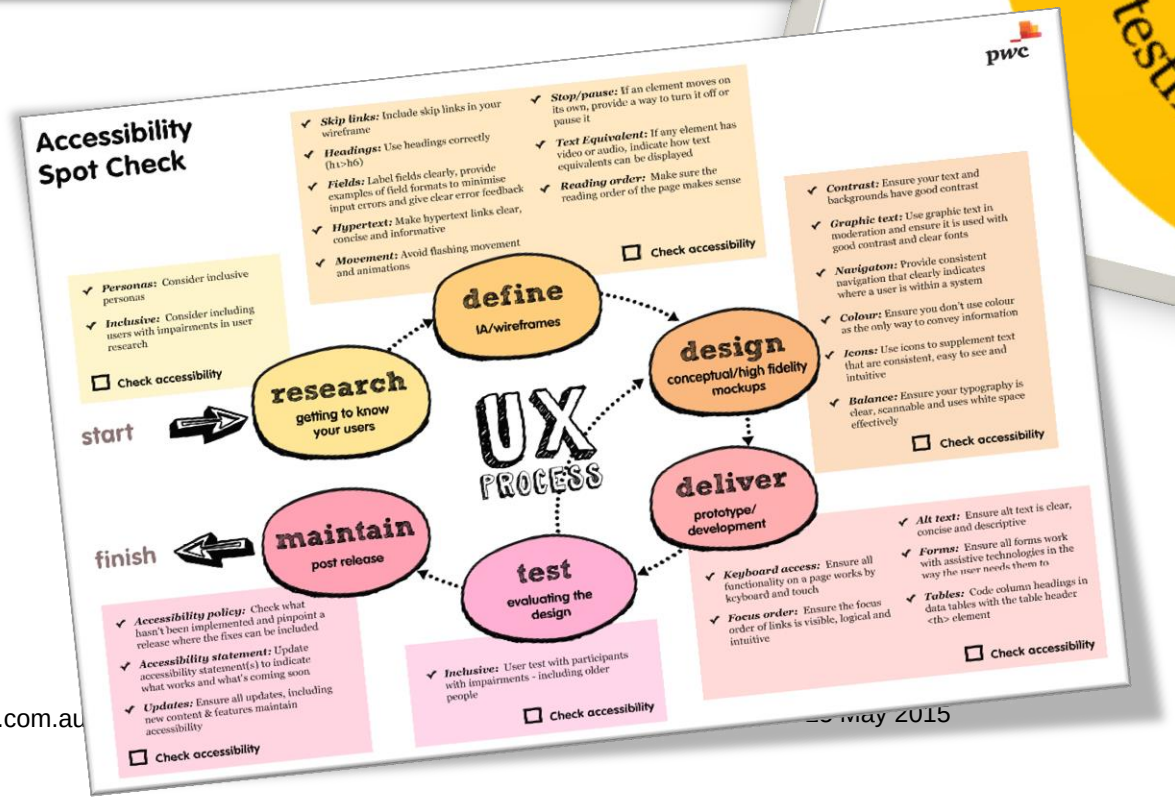
Manual testing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Thank you

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