



Using WCAG 2.1

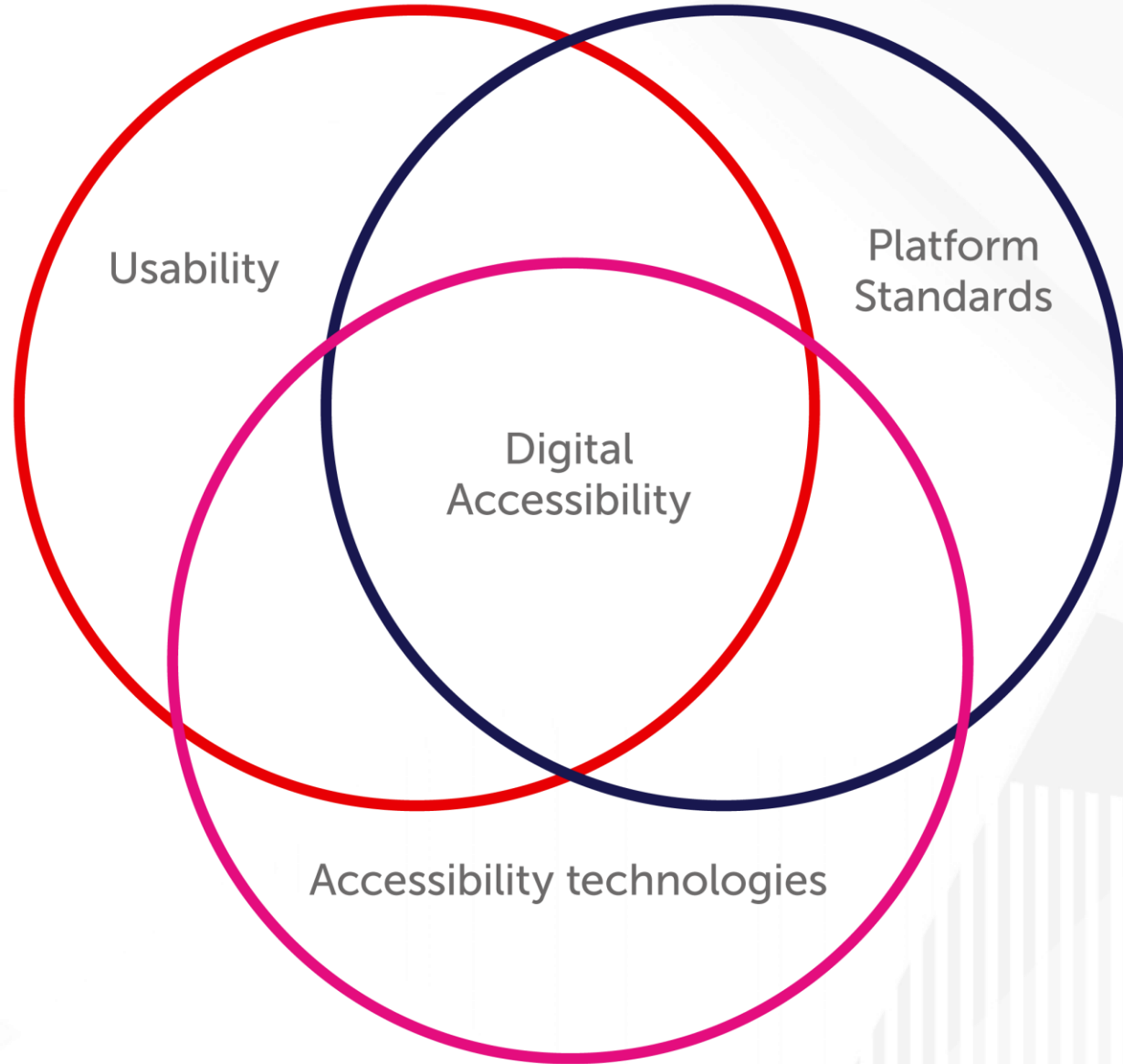
What is it, what's new, case study

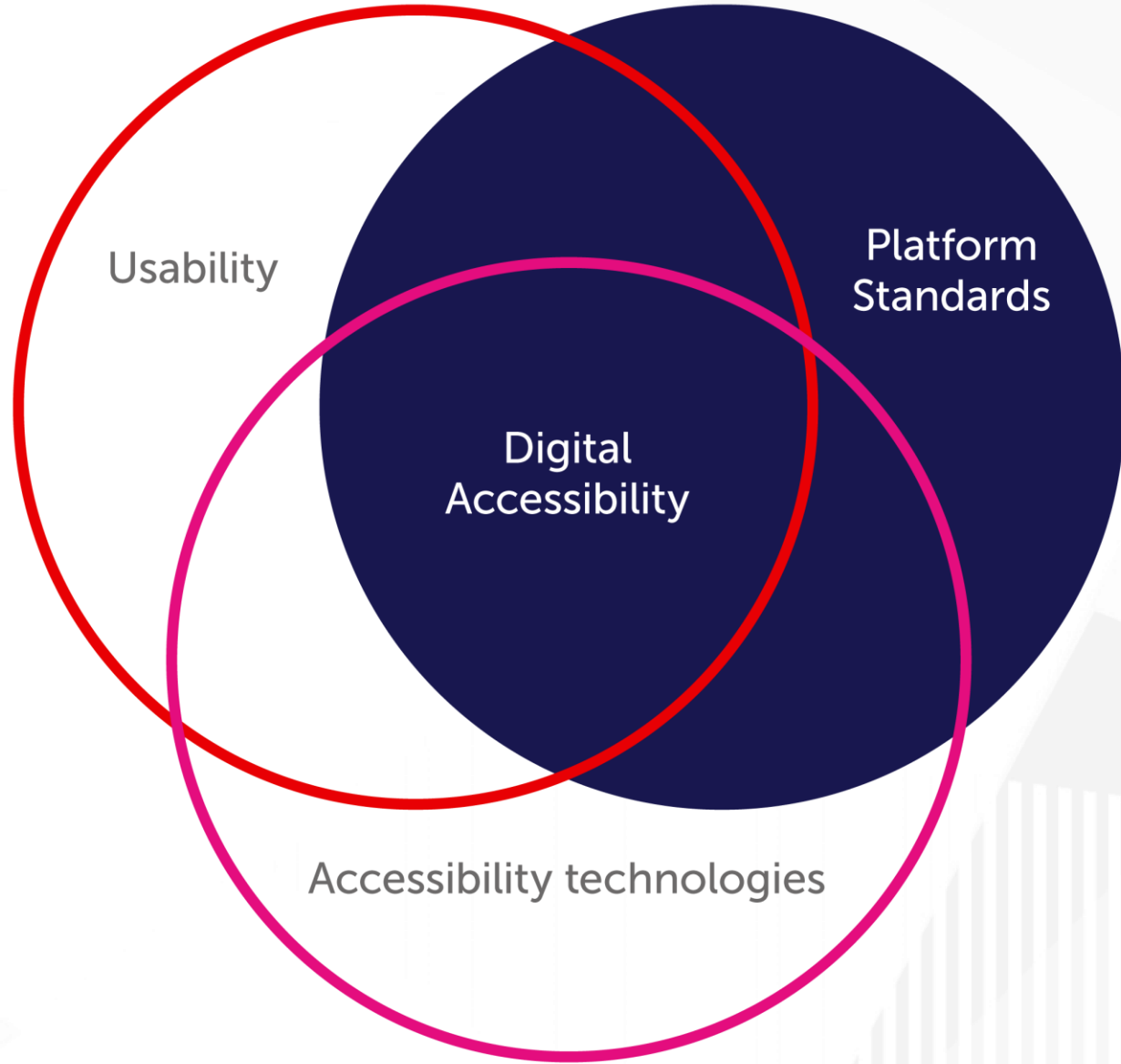
1st April 2019

Hello

- Quick intro
- Creating accessibility guidelines
- What's new
- What to do with them
- NHS Case study

Accessibility in Digital Projects







Web Platform standards

Web Content Accessibility Guidelines (WCAG) 2.1
W3C Recommendation 05 June 2018

This version:
<https://www.w3.org/TR/2018/REC-WCAG21-20180605/>

Latest published version:
<https://www.w3.org/TR/WCAG21/>

Latest editor's draft:
<https://w3c.github.io/wcag/21/guidelines/>

Implementation report:
<https://www.w3.org/WAI/WCAG21/implementation-report/>

Previous version:
<https://www.w3.org/TR/2018/PR-WCAG21-20180424/>

Previous Recommendation:
<https://www.w3.org/TR/2008/REC-WCAG20-20081211/>

Editors:
[Andrew Kirkpatrick](#) (Adobe)
[Joshue O Connor](#) (Invited Expert, InterAccess)
[Alastair Campbell](#) (Nomensa)
[Michael Cooper](#) (W3C)

WCAG 2.0 Editors (until December 2008):
[Ben Caldwell](#) (Trace R&D Center, University of Wisconsin-Madison)
[Loretta Guarino Reid](#) (Google, Inc.)
[Gregg Vanderheiden](#) (Trace R&D Center, University of Wisconsin-Madison)
[Wendy Chisholm](#) (W3C)
[John Slatin](#) (Accessibility Institute, University of Texas at Austin)
[Jason White](#) (University of Melbourne)

Please check the **errata** for any errors or issues reported since publication.

See also **translations**.

This document is also available in non-normative formats, available from Alternate Versions of Web Content Accessibility Guidelines 2.1.

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Abstract

HTML

HTML 5.3
W3C Working Draft, 3 July 2018

This version:
<https://www.w3.org/TR/2018/WD-html53-20180703/>

Latest published version:
<https://www.w3.org/TR/html53/>

Editor's Draft:
<https://w3c.github.io/html/>

Previous Version:
<https://www.w3.org/TR/2018/WD-html53-20180426/>

CSS

CSS Snapshot 2017
W3C Working Group Note, 31 January 2017

This version:
<https://www.w3.org/TR/2017/NOTE-css-2017-20170131/>

Latest published version:
<https://www.w3.org/TR/css-2017/>

JavaScript

Web technology for developers > JavaScript

Related Topics

JavaScript

Tutorials:

- Complete beginners
- JavaScript Guide
- Intermediate
- Advanced

References:

- Built-in objects
- Expressions & operators
- Statements & declarations
- Functions
- Classes
- Errors
- Misc
- New in JavaScript

JavaScript (JS) is a lightweight, interpreted or JIT compiled programming language with first-class functions. Most well-known as the scripting language for Web pages, many non-browser environments also use it, such as Node.js and Apache CouchDB. JS is a prototype-based, multi-paradigm, dynamic scripting language, supporting object-oriented, imperative, and declarative (e.g. functional programming) styles. Read more about JavaScript.

This section of the site is dedicated to the JavaScript language itself, and not the parts that are specific to Web pages or other host environments. For information about APIs specific to Web pages, please see Web APIs and DOM.

The standard for JavaScript is ECMAScript. As of 2012, all modern browsers fully support ECMAScript 5.1. Older browsers support at least ECMAScript 3. On June 17, 2015, ECMA International published the sixth major version of ECMAScript, ECMAScript 2015. Since then, ECMAScript standards are on yearly release cycles. This documentation refers to the latest draft version, which is currently ECMAScript 2019.

Do not confuse JavaScript with the Java programming language. Both "Java" and

Starting with WCAG?

Web Content Accessibility Guidelines (WCAG) 2.1



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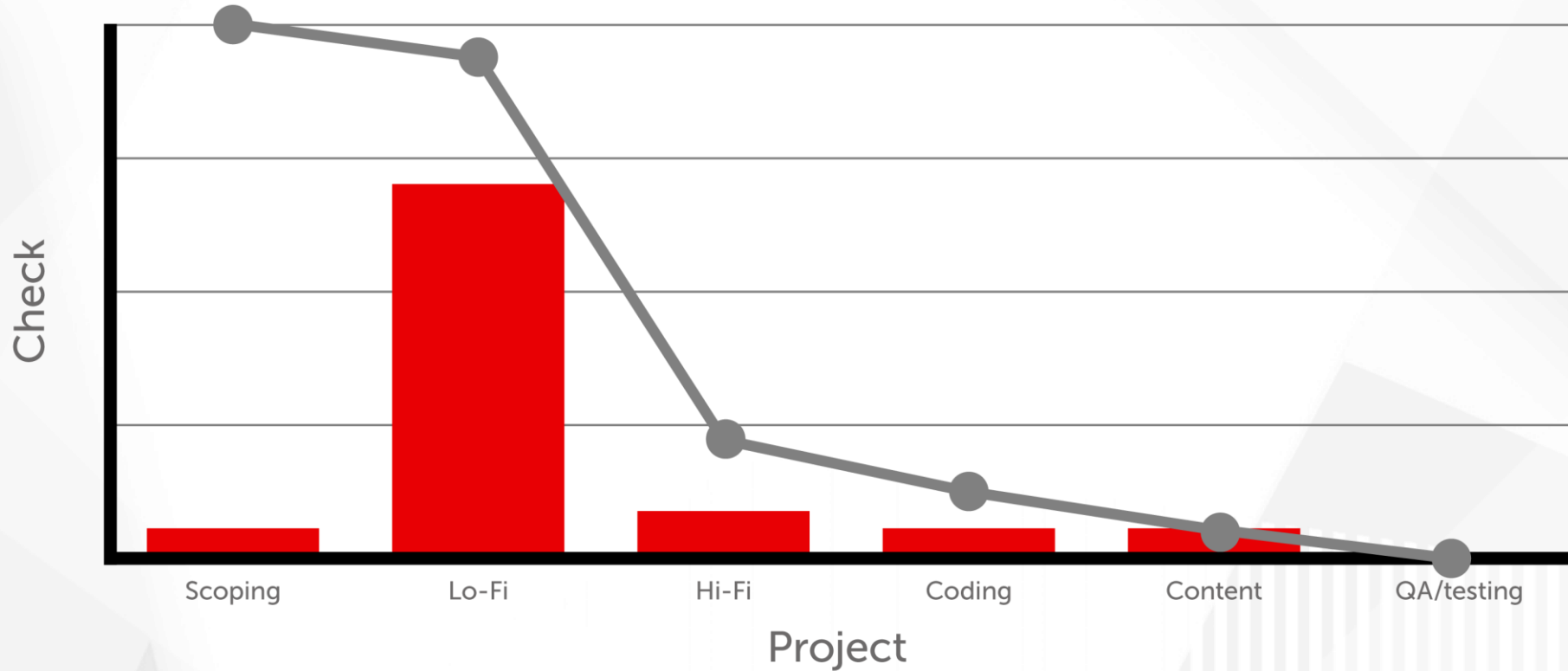
Loretta Guarino Reid (Google, Inc.)

Gregg Vanderheiden (Trace R&D Center, University of Wisconsin-Madison)

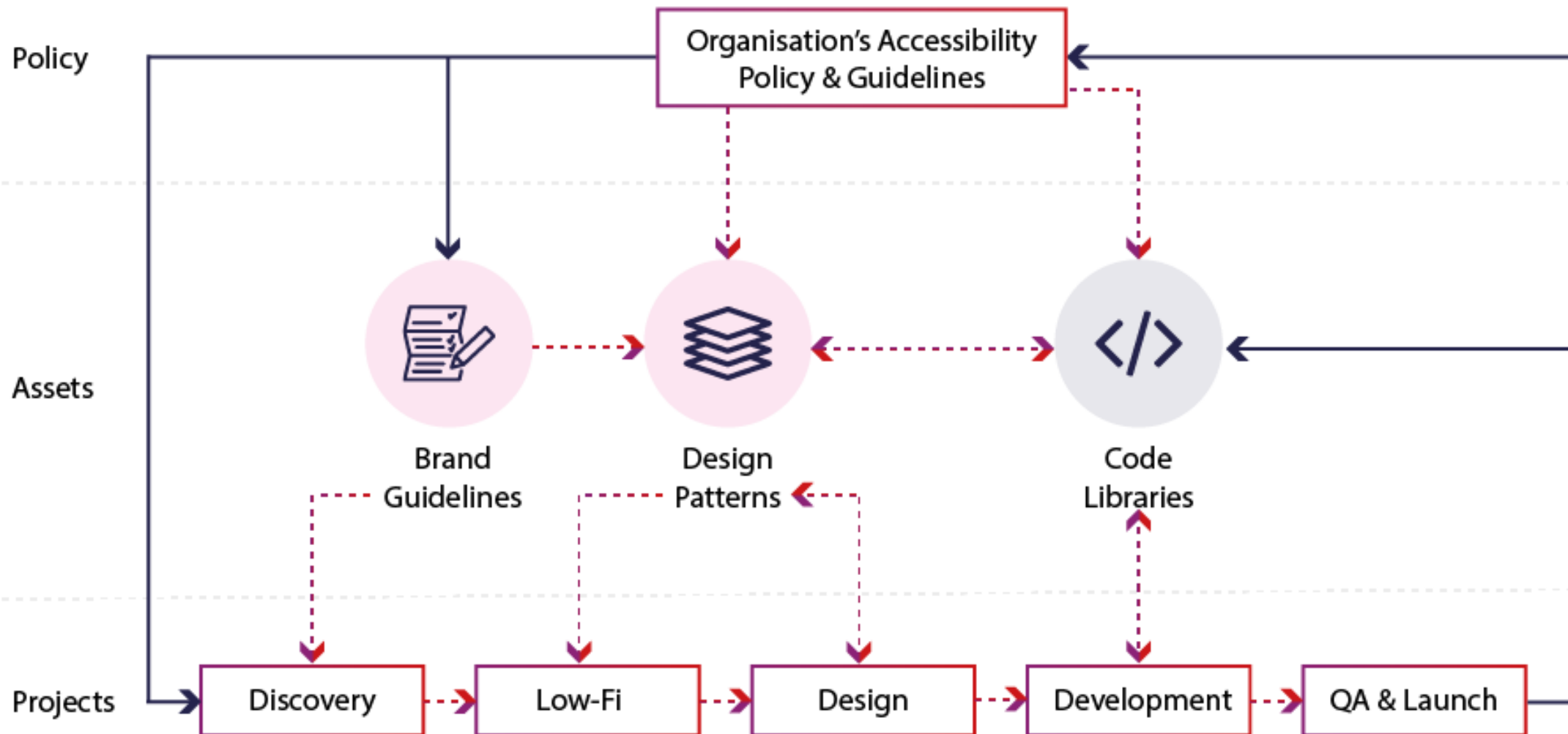
Avoid a checklist mentality



Define your accessibility approach early



Goal: Continuous improvement



How do we evaluate accessibility?

Approach | Designs | Development



Accessibility testing methods

Testing with people with disabilities

- Usability testing
- (Testing by experts as proxies)

Testing with rules

- Review pages with the guidelines
- Semi-automated review
- Automated review



Usability testing (with PwD)

Great for:

- Testing a live site / app
- Prioritising issues
- Learning
- Getting buy in

Not so good for:

- Site-wide, even in-page coverage
- Budgets





Accessibility testing methods

People

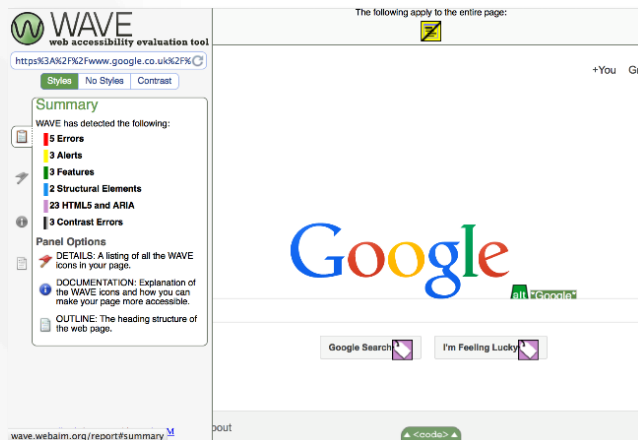


Guidelines

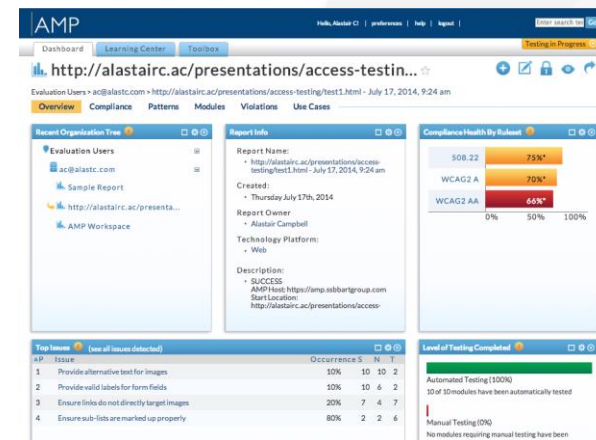
Keyboard Use

Check	Pass?	Checkpoints
The sequence of content makes sense.		1.3.2, 2.4.3
Navigation is consistently placed.		3.2.3
There is a mechanism to skip to content, or skip past navigation.		2.4.1
The location of the keyboard focus is visually obvious.		2.4.7
All functionality is operable with a keyboard.		2.1.1
Keyboard focus does not get trapped.		2.1.2
Changing a widget (e.g. drop down) doesn't automatically take you somewhere else.		3.2.2

Semi-automated tools



With automated tools





Testing with guidelines

Great for...

- Per-page checks at later stages of development
- Coverage (with a good sample)
- Saying you've done your bit

Not so good for:

- In-experienced testers

Keyboard Use

Check	Pass?	Checkpoints
The sequence of content makes sense.		1.3.2 , 2.4.3
Navigation is consistently placed.		3.2.3
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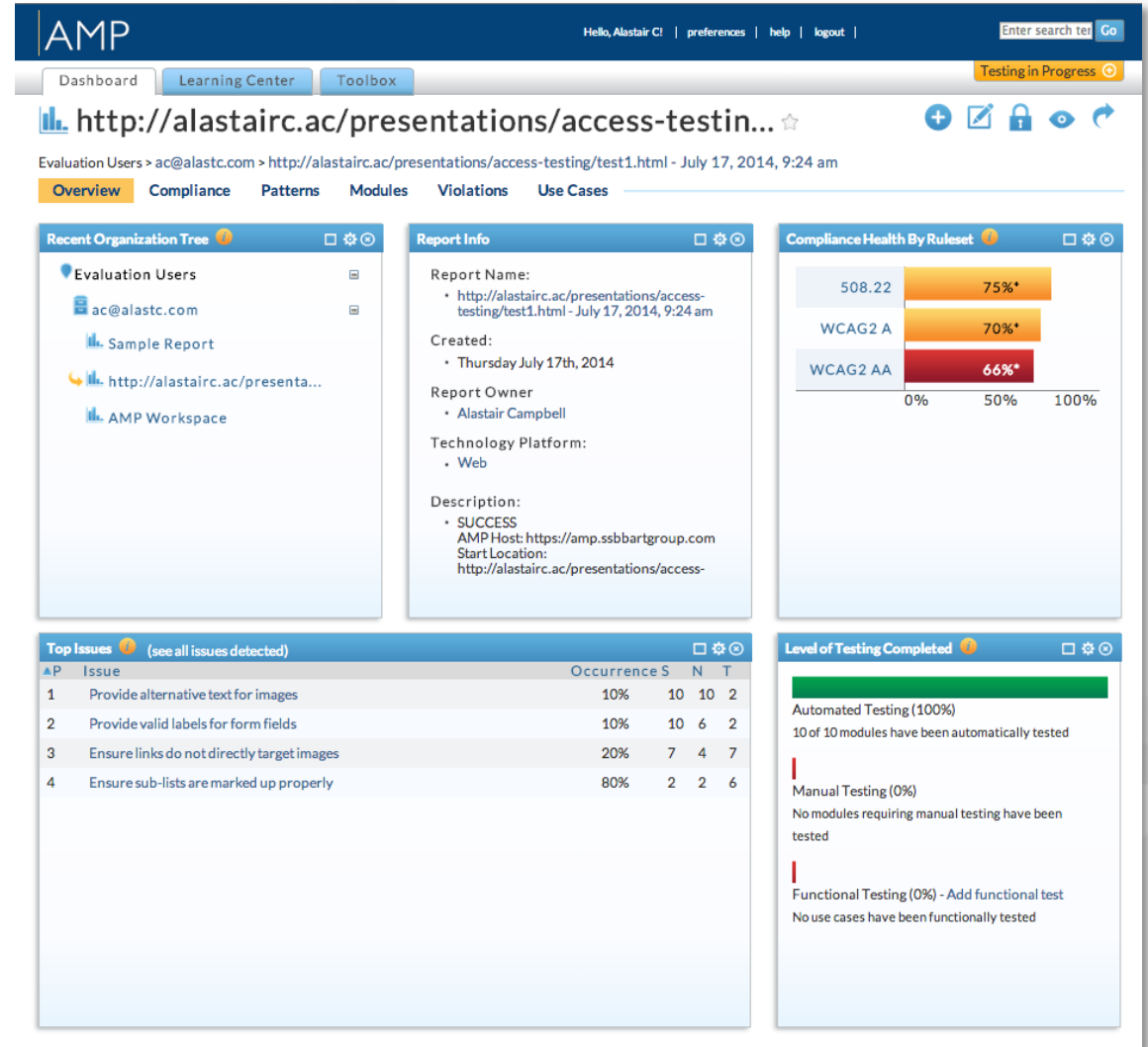
Automated testing

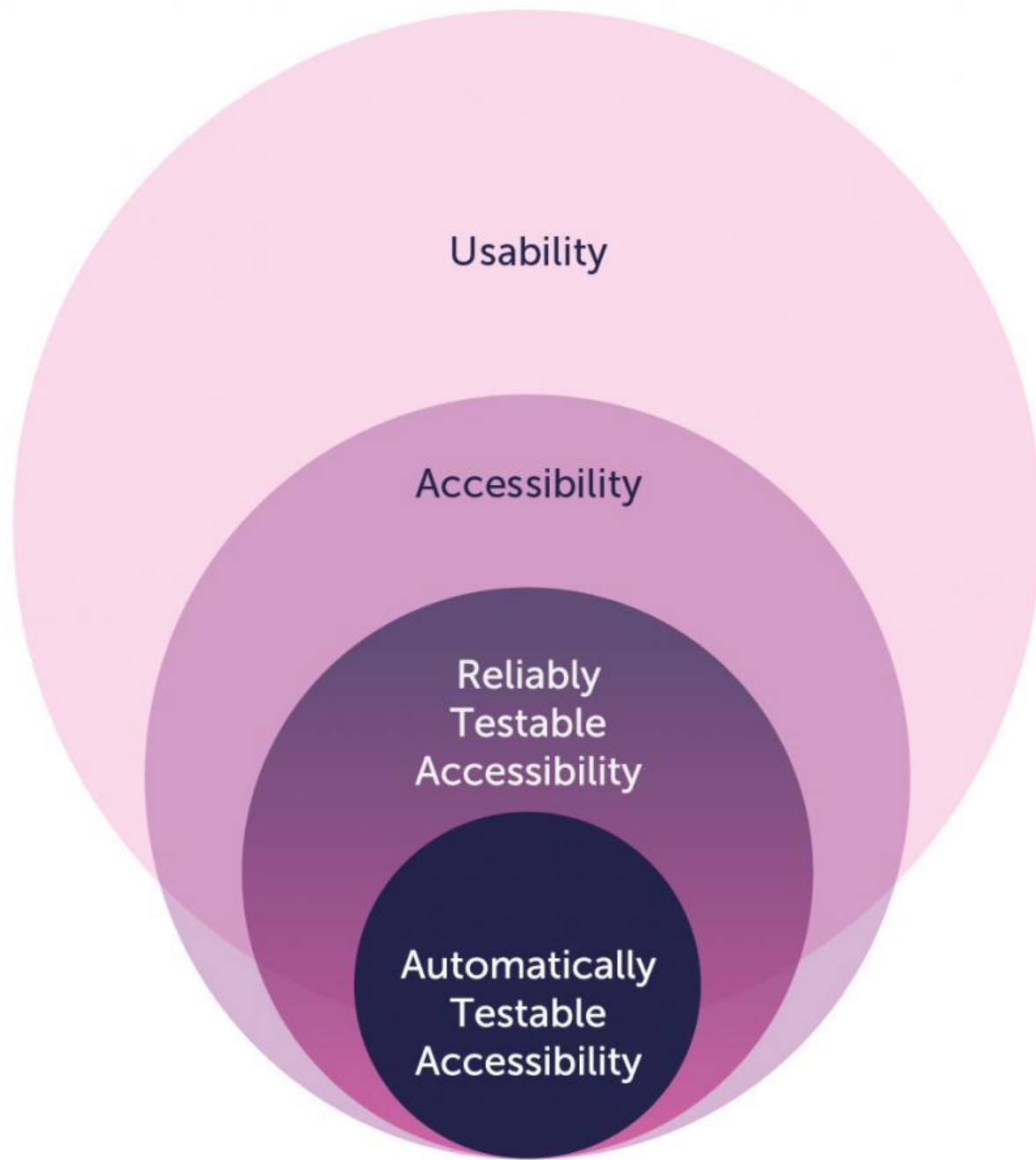
Great for...

- Wide coverage of a site
- Integrating with a build process

Not great for:

- Depth of coverage
- Saying it meets the guidelines



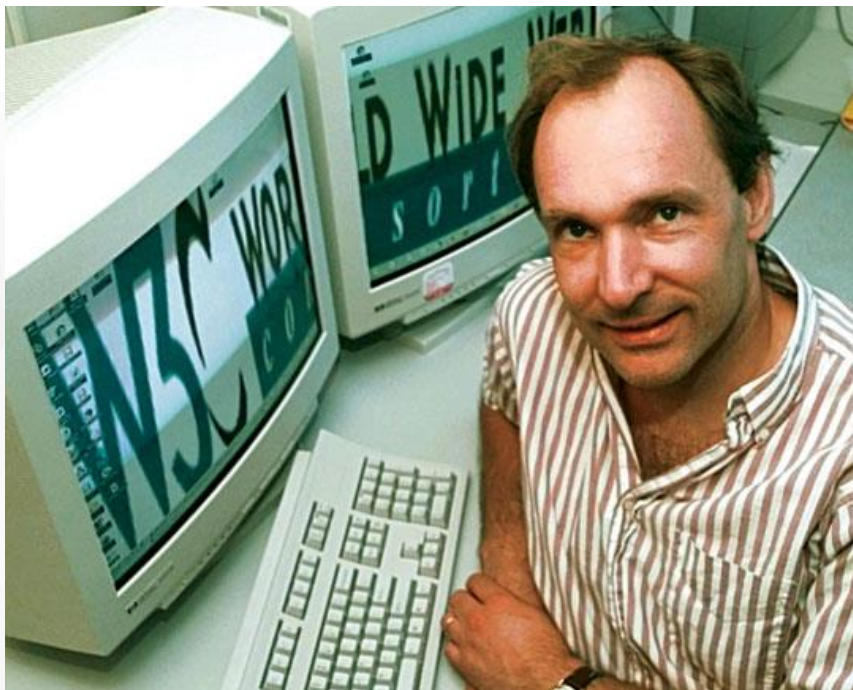


What is Wuh-CAG?

Web CONTENT accessibility guidelines

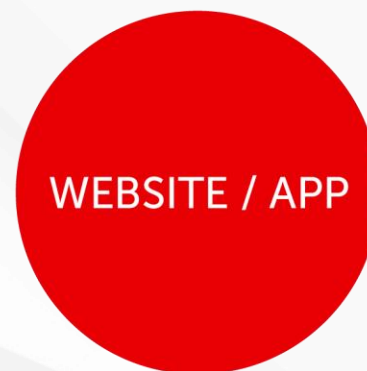
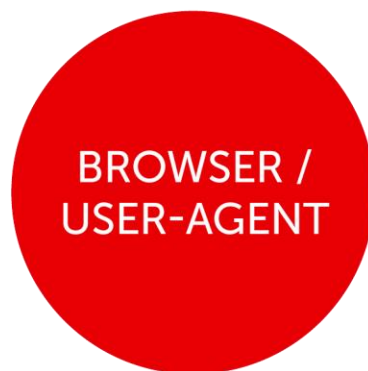


World Wide Web Consortium (W3C)

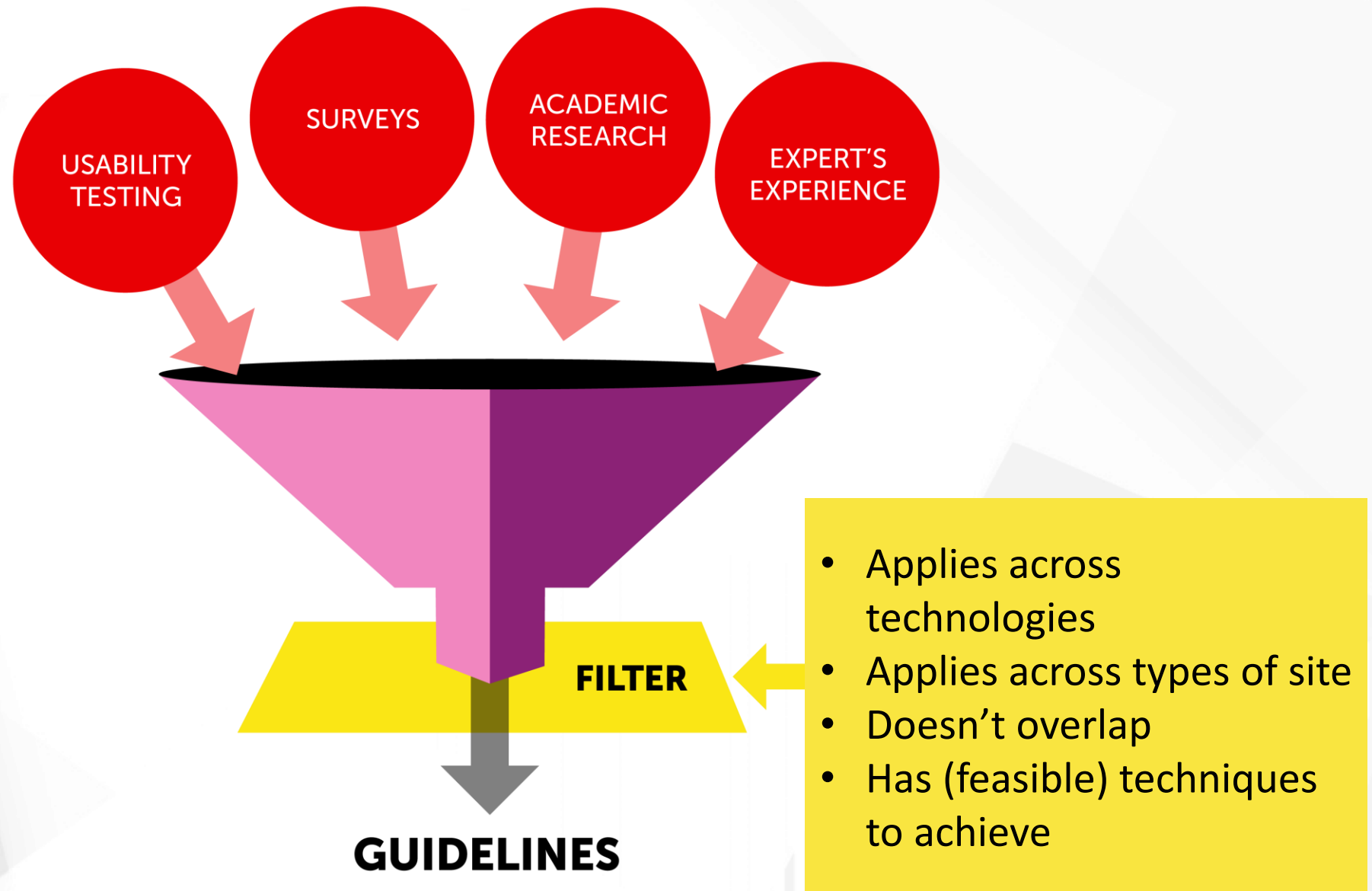








Creation process



Guidelines are a baseline

Many user-requirements did not become criteria because they:

- could not be applied across all types of website;
- could not be tested reliably;
- would dictate the visual display of the website;
- needed solutions (across technologies) that were not reliable or feasible.

Therefore: There are probably requirements not covered by WCAG that may be relevant for your website.



What is a content guideline?

Unworkable:

“Users can navigate by headings and lists when appropriate.”

Difficult to understand, but works:

“Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.”



WCAG 2.1: Principles, Guidelines, Success Criteria

Principles (4)

Principle 3: Understandable - Information and the operation of user interface must be understandable.

Guidelines (13)

Guideline 3.1 Readable: Make text content readable and understandable.

Success Criteria (78)

3.1.1 Language of Page: The default human language of each Web page can be programmatically determined. (Level A)

Success criteria: A testable statement about any web content that is known to improve access for people with disabilities.



Levels: A, AA, AAA

Not meeting a SC means:

Level A (30): Critical, people will not be able to access the content.

Level AA (20): Essential, significant barriers would remain for some people.

Level AAA (28): Useful, possibly essential to some.

Not officially defined, in practice:

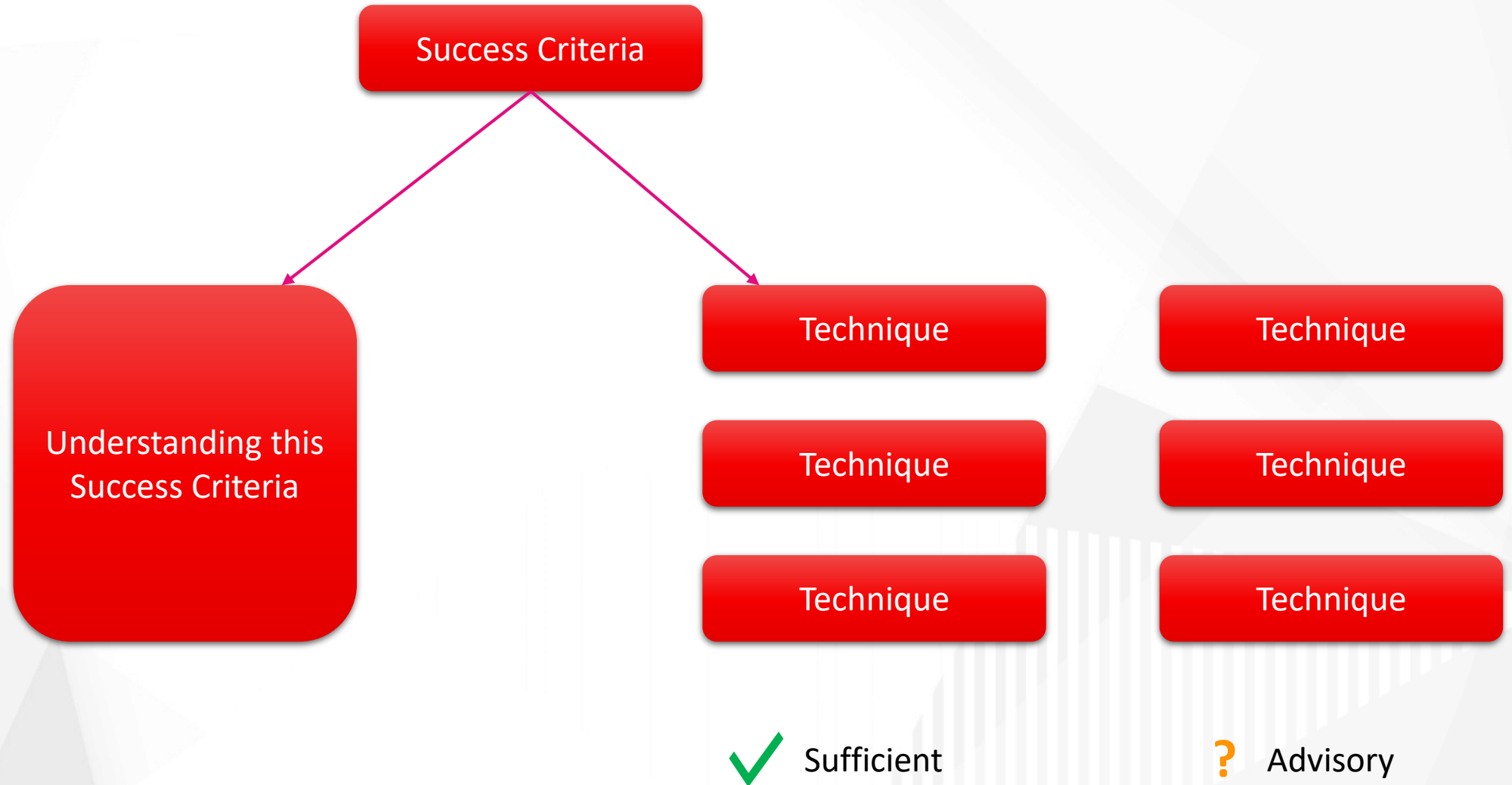
↑ Barrier that cannot be overcome by user's technology

↓ Difficult or infeasible in practice

↓ Does not apply to all content

↓ Requires a change to look & feel for everyone

Structure of supporting info





“Understanding”

Success Criterion 1.3.1 Info and Relationships

(Level A)

Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.

Understanding Success Criterion 1.3.1: Info and Relationships

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

Intent

The intent of this Success Criterion is to ensure that information and relationships that are implied by visual or auditory formatting are preserved when the presentation format changes. For example, the presentation format changes when the content is read by a screen reader or when a user style sheet is substituted for the style sheet provided by the author.

Sighted users perceive structure and relationships through various visual cues — headings are often in a larger, bold font separated from paragraphs by blank lines; list items are preceded by a bullet and perhaps indented; paragraphs are separated by blank lines.

On this page:

Intent
Benefits
Examples
Related Resources
Techniques



Understanding Info and Relationships
How to Meet Info and Relationships

Guideline 1.3 – Adaptable

Create content that can be presented in different ways (for example simpler layout) without losing information or structure.

1.3.1 Info and Relationships — Level A

Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.

Understanding 1.3.1

Hide techniques and failures for 1.3.1

☒ Sufficient

☒ Advisory

☒ Failures

Sufficient Techniques

Note: Other techniques may also be sufficient if they meet the success criterion. See [Understanding Techniques](#).

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

- [ARIA11: Using ARIA landmarks to identify regions of a page](#)
- [ARIA12: Using role=heading to identify headings](#)
- [ARIA13: Using aria-labelledby to name regions and landmarks](#)
- [ARIA16: Using aria-labelledby to provide a name for user interface controls](#)
- [ARIA17: Using grouping roles to identify related form controls](#)
- [ARIA20: Using the region role to identify a region of the page](#)
- [G115: Using semantic elements to mark up structure](#) AND [H49: Using semantic markup to mark emphasized or special text](#)

WCAG 2.1

What's new?



Why update WCAG?





Text to GUI

espeakup connector

=====

espeakup is a program which makes it possible for speakup to use the espeak software synthesizer. It does this by reading speakup's softsynth device and passing the text to espeak which actually speaks.

Requirements

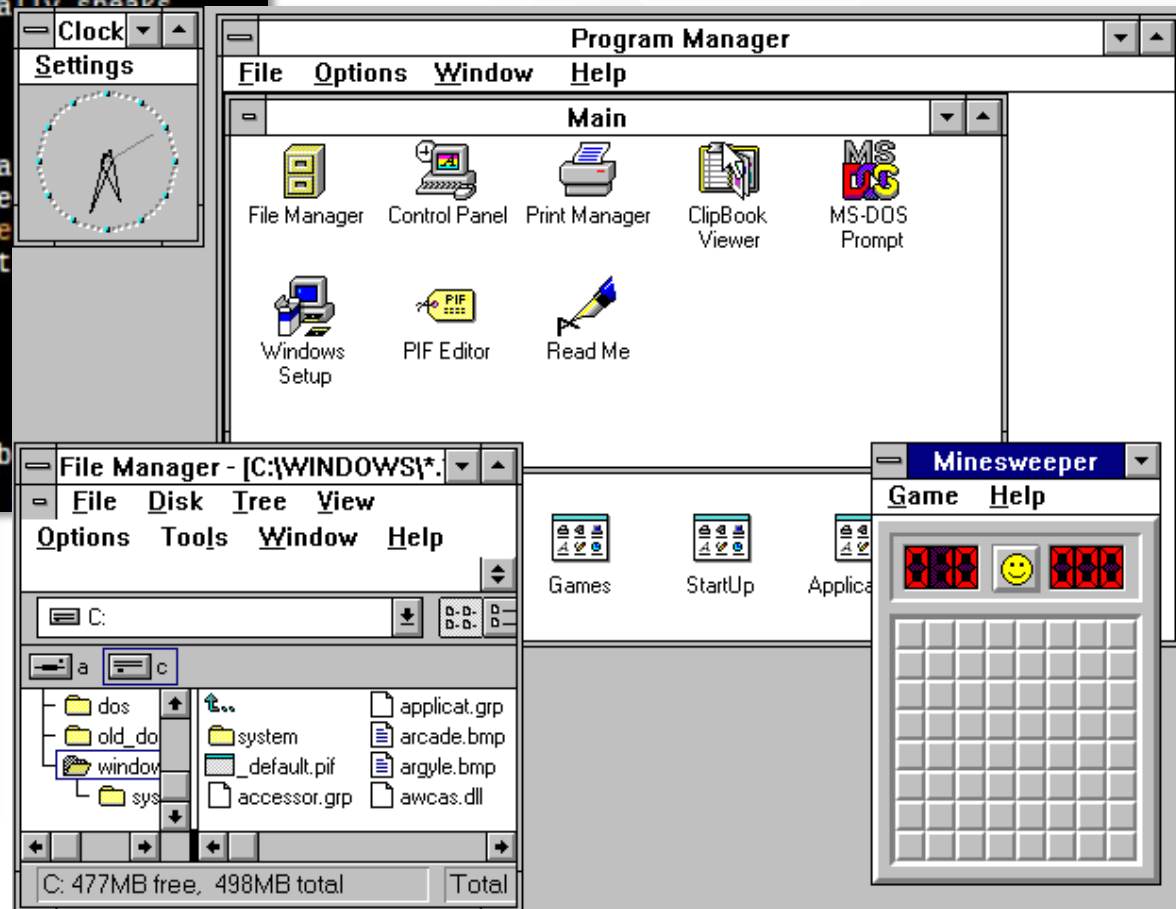
=====

This program works with the speakup screen reader, which can be obtained from <http://linux-speakup.org>, and the espeak software synthesizer which can be obtained from <http://espeak.sourceforge.net>. You must have both of these installed and operational. Setting up speakup is beyond the scope of this document.

Installation

=====

The preferred way to install espeakup is using your distribution's packaging system, but if your distribution does not have a package for espeakup, you can compile and install it from source.





Buttons to touch screen



Solid to virtual



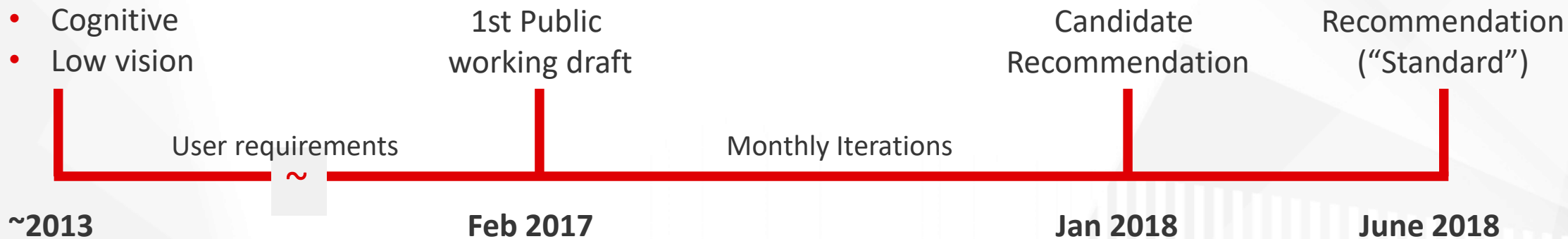


WCAG 2.1 timescale

NB: WCAG 2.0 is unchanged, and some policies will likely reference it for some time

Three task forces formed:

- Mobile
- Cognitive
- Low vision



Over 60 proposals for new criteria (A or AA), 17 made it



New criteria - Mobile

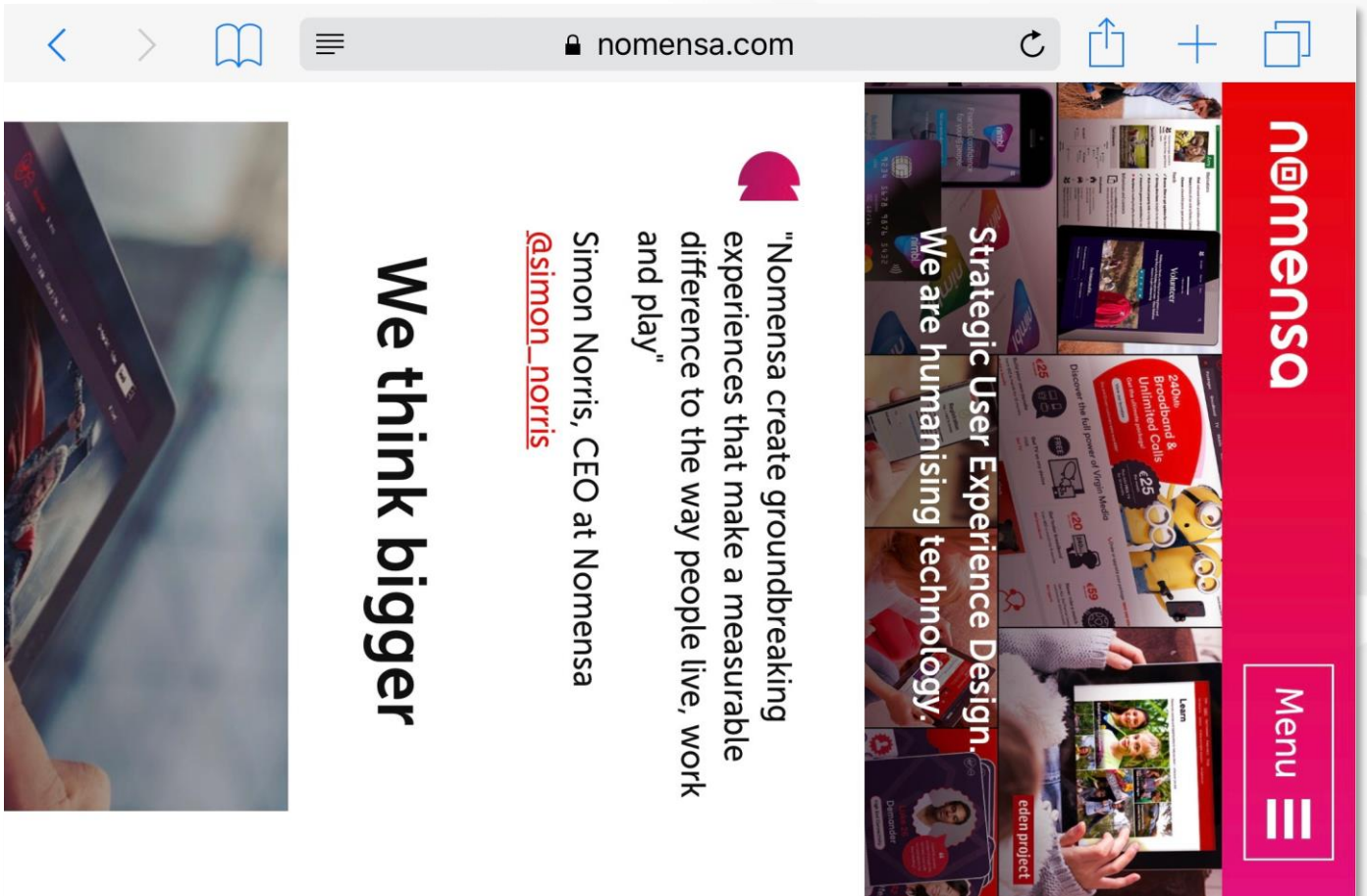
- **Orientation (AA):** Functionality is not locked to one orientation.
- **Character Key Shortcuts (A):** Single-key shortcuts can be turned-off or remapped.
- **Pointer Gestures (A):** Everything can be achieved without gestures.
- **Pointer cancelation (AA):** Don't use the 'down' event.
- **Label in Name (A):** the programmatic name includes the visible name.
- **Motion Activation (A):** Only activate on the 'up' event.
- **Target Size (AAA):** controls are at least 44 x 44 pixels (with exceptions, AAA without exceptions).
- **Concurrent Input Mechanisms (AAA):** are not restricted.





Orientation

“Content does not restrict its view and operation to a single display orientation, such as portrait or landscape, unless a specific display orientation is essential.”





Character Key Shortcuts

Paraphrasing:

If the site implements keyboard short-cuts then restrict them to particular components; or let people turn them off or remap them.

Bob (a Dragon user) sits in front of gmail.

Their friend Kim walks in, Bob looks up.

“Hey Kim”, Dragon picks up:

Y = archive current message

K = move down one

M = mute message/thread

Bob looks at the screen, “Doh!”



Gmail



More



COMPOSE

Keyboard shortcuts

[Open in a new window](#) | [Close](#)

Inbox

Starred

Sent Mail

Drafts (2)

▶ [Mailbox]

Accessibility (877)

Django (35,253)

html (766)

Notes

Sent Messages

W3C

More



Alastair



Oliver Newman

Alastair-Nomensa Ca
Invitation sent

Anika McCrohan



Chris Forster

Alastair .. Frances (5)

Fwd: X4790461 - Report on 46, Ash Hayes Road, Nailsea, Bristol, BS48 2LV - Hi there, Any day...

1-11 of 11

Feb 10

12/16/16

11/30/16

10/17/16

10/17/16

7/26/16

1/31/16

12/18/15

4/4/14

12/11/13

11/30/13

1-50 of 279

Jun 17

Jun 17

Jun 16

Alastair .. Frances (5)

Welcome to Local Guides – let's get you started - Make your first contribution in Google Maps Welcome to Local Guides

Alastair .. Frances (5)

You can now set up two-step verification for your Apple ID

Alastair .. Frances (5)

Hmm - Or maybe not - read it wrong, too tired - doesn't look much like Fran

Alastair .. Frances (5)

Apparently I can save you £1.1K on your tax bill... - https://www.gov.uk/marriage-allowance Fran

Alastair .. Frances (5)

Fwd: Junior ISAS - Alastair Campbell Forwarded message from: Chris Forman <chrismforman@gm

Alastair .. Frances (5)

Outdoors activity - Now that looks like fun. See you there! - Reply message From: "tony harrism

Alastair .. Frances (5)

FW: BBC User Experience Testing Best Practices Working Group (BBC UXT BP WG) - Did you say y

Alastair .. Frances (5)

Accessibility Test run WCAG-EM - Detlev Fischer <detlev.fischer@test

Alastair .. Frances (5)

off listRe: Reminder deadline Thur 15 Aug 2013 - Hi Alastair, S

Alastair .. Frances (5)

[WebAIM] browser zoom VS text zoom - I wrote: > I think it might be time to start refin

Alastair .. Frances (5)

<Shift> + 1 : Align left

Alastair .. Frances (5)

<Shift> + e : Align center

Alastair .. Frances (5)

<Shift> + r : Align right

Alastair .. Frances (5)

<Shift> + Top : Set right-to-left

Alastair .. Frances (5)

<Shift> + . : Set left-to-right

Alastair .. Frances (5)

Usability / IA Shopping online for one-of-a-kind products - If someone has a one-of-a-kind item

Alastair .. Frances (5)

<Shift> + \ : Remove formatting

Alastair .. Frances (5)

evidence for CSS Grid support - After this, I will get out of your inbox on this subject, but thought

Alastair .. Frances (5)

Alastair .. Frances (5)

Alastair .. Frances (5)

Alastair .. Frances (5)

Alastair .. Frances (5)

Alastair .. Frances (5)

Alastair .. Frances (5)

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Alastair .. Frances (5)

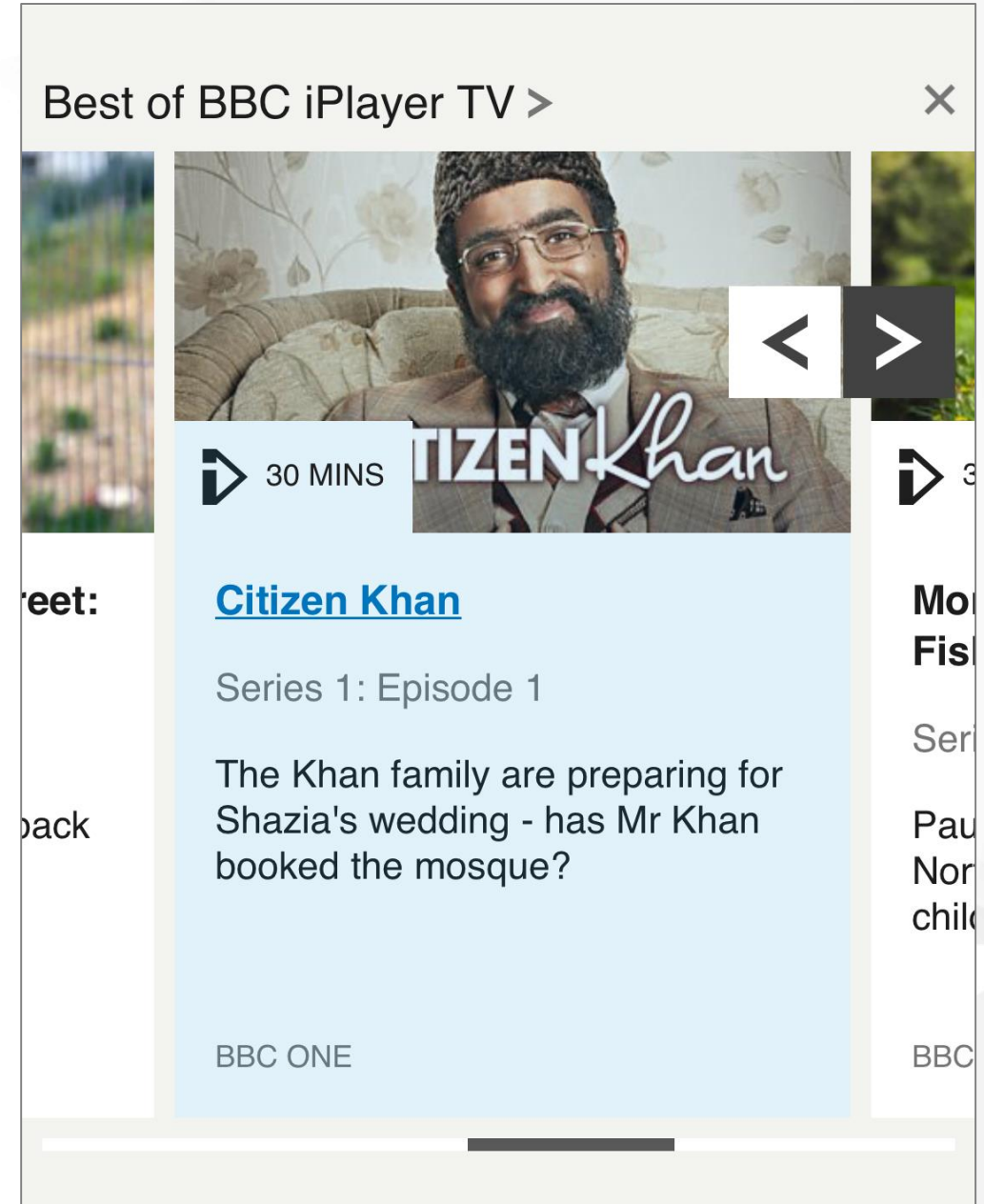
Alastair .. Frances (5)

Alastair .. Frances (5)



Pointer Gestures

All functionality that uses multipoint or path-based gestures for operation **can be operated with a single pointer** without a path-based gesture, unless a multipoint or path-based gesture is essential.



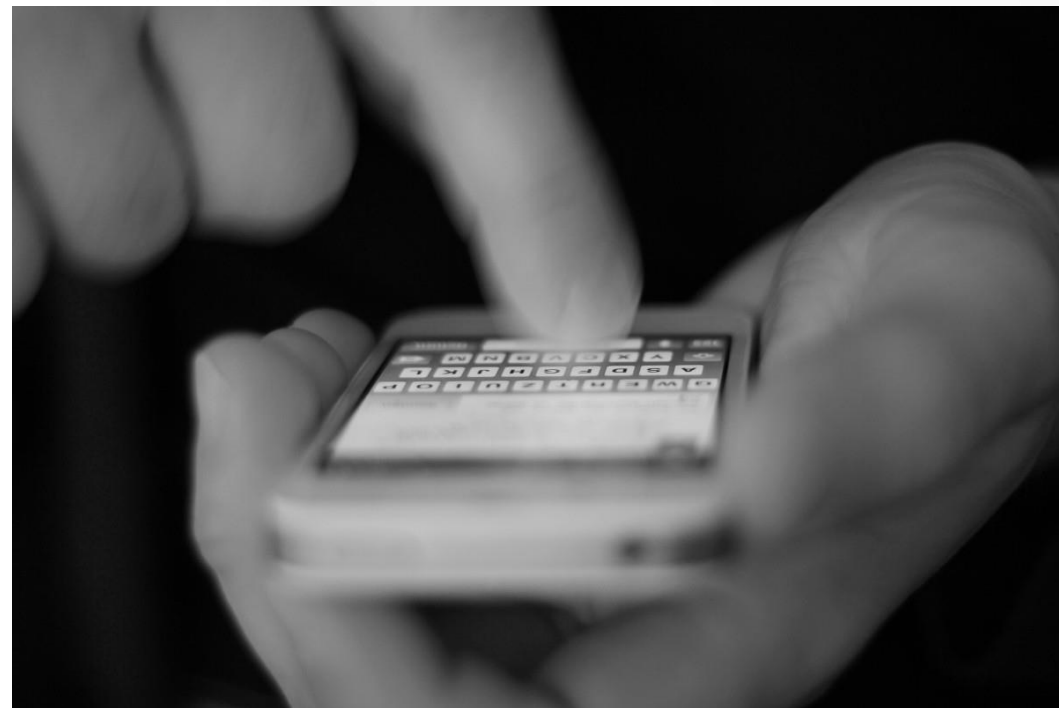


Pointer Cancellation

Paraphrasing:

For functionality that is used with a click or tap, don't use the 'down' event unless there is no other way.

Alice scrolled through an article on her phone, an advert in the page activates as soon as she touches it, even though she is trying to scroll.

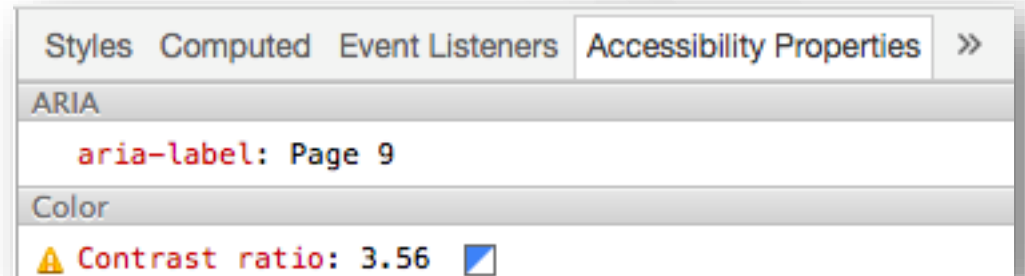




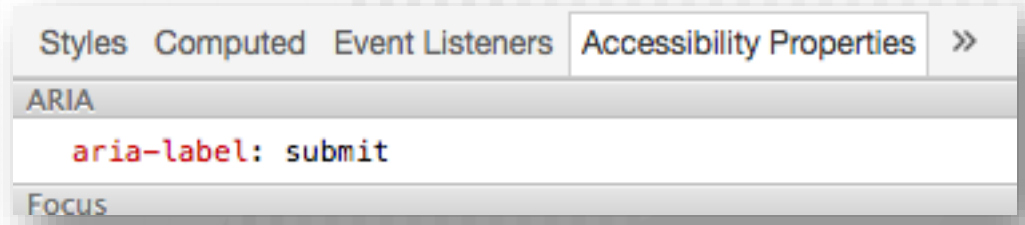
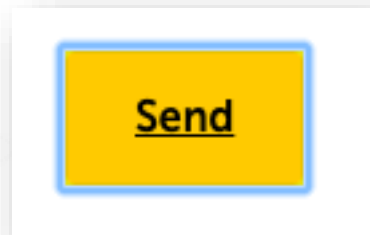
Label in Name

“For user interface components with labels that include text or images of text, the name contains the text that is presented visually.”

Pass:



Fail:

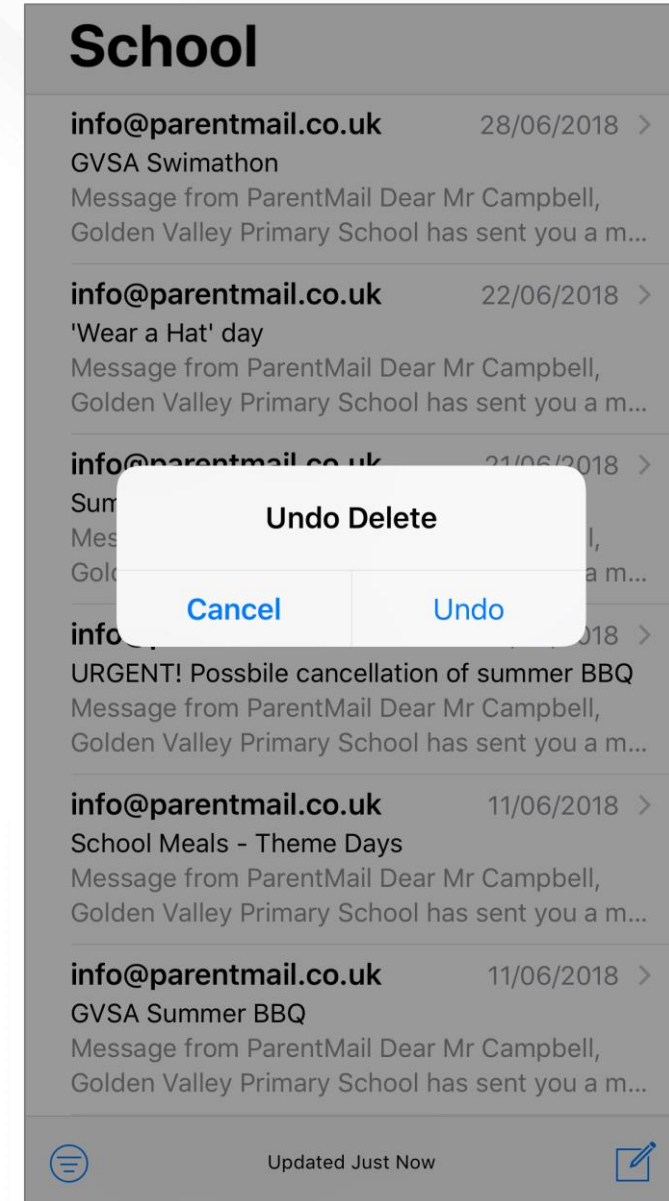




Motion Actuation

Paraphrasing:

Features activated by device-motion also have buttons to use, and motion-based features can be disabled.





New criteria – Low vision

- **Zoom content:** Pages can be zoomed to 400%.
- **Adapting Text:** Allow some buffer for small text-adaptations.
- **Graphics contrast:** Is 3:1 for graphics that are ‘required for understanding’ and controls / inputs.
- **Content on Hover or Focus:** Does not obscure the trigger, and the pointer/focus can move into the new content.




Reflow - 400% zoom

“Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for:

- Vertical scrolling content at a width equivalent to 320 CSS pixels;
- Horizontal scrolling content at a height equivalent to 256 CSS pixels.

Except for parts of the content which require two-dimensional layout for usage or meaning.”



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Starting at 99 cents

Members
Sign In

Metro Sports Business & Tech Opinion Politics Lifestyle Marijuana Arts Cars Real Estate Events 🔍



JESSICA RINALDI/GLOBE STAFF

A family sought seclusion in N.H. Instead, they found terror

Key questions remain unanswered in Kraft's case

A Globe review of law-enforcement documents found a number of lines of inquiry that have received little public attention but almost certainly are being examined by Robert Kraft's lawyers.

BOLD TYPES

A new series talking with city business leaders about their careers and visions for Boston.

PRESENTED BY 



Joanne Chang is always on the move

The Globe sits down with leaders in the city's business community to talk about their career paths, work, and accomplishments, as well as their vision for Boston's future. First up is Joanne Chang of Flour



Adaptable text

Paraphrase:

In HTML/CSS users can override styles. Check that doing this doesn't make things unreadable when you set:

- Line height to at least 1.5;
- Spacing following paragraphs to at least 2;
- Letter spacing (tracking) to at least 0.12;
- Word spacing to 0.16.



Testing layouts and text spacing

Combining three criteria in one test:

- Open Chrome / Edge / Firefox at 1280px wide, landscape
- Zoom in to 400% (i.e. 320px wide)
- **Check** the same/equivalent functionality is available
- **Check** that text is at least 200% bigger at some point
- Apply the text-spacing styles
- Gradually zoom out
- **Check** for overlapping / unreadable text



← → ↺ 🏠 ⓘ 🔒 https://www.nhs.uk/oneyou/ ... ☆ − 110% + 🔔 📄 ⚙️ ⋮ 📧 📅 🌐

⚙️ Most Visited 📁 Services 📁 Admins 📁 Local Sites 📁 Hosted Sites 📁 Tools 📁 Send to 📁 Meeting links 📁 Docs 📁 OneDrive 📁 MIT Webex 📁 Pinboard 📁 Trello 📁 Basecamp 📁 World Clock >>

ONE YOU | HOW ARE YOU? QUIZ | EVERY MIND MATTERS | FOR YOUR BODY | FOR YOUR MIND | OFFERS | APPS | ABOUT

HOW ARE YOU?

Take our free quiz to get your health score, along with personalised advice and easy tips for healthier living.

TAKE THE QUIZ

● ○ ○

THERE'S ONLY ONE YOU



Non-text contrast

The visual presentation of the following have a contrast ratio of at least 3:1 against adjacent color(s):

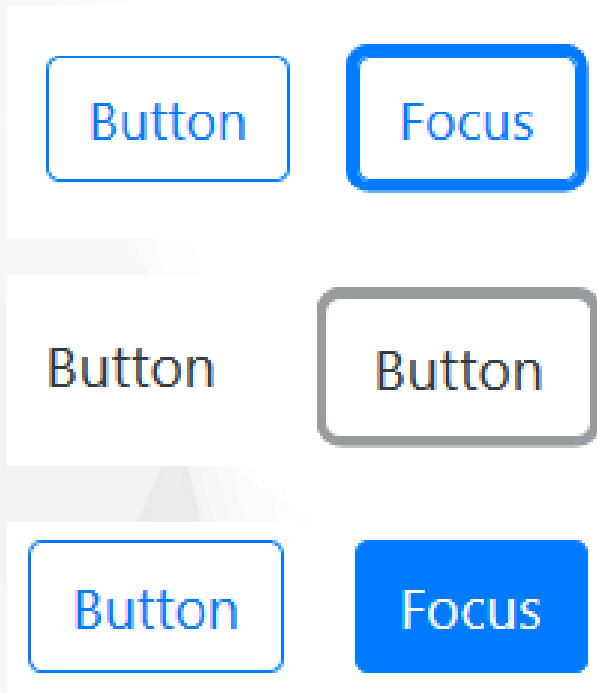
- **User Interface Components:** Visual information required to identify user interface components and states, except for inactive components or where the appearance of the component is determined by the user agent and not modified by the author;
- **Graphical Objects:** Parts of graphics required to understand the content, except when a particular presentation of graphics is essential to the information being conveyed.



User Interface Components (Interactive controls)

The aspects that define a control need reasonable (3:1) contrast.

Focus styles



Input styles

Name:

Name:

Name:



Graphical objects

The screenshot shows the GitHub repository page for `w3c / wcag21`. The repository is titled "WCAG 2.1 and support materials". It has 1,398 commits, 84 branches, 68 releases, and 18 contributors. The repository is currently on the `master` branch. The page shows a list of recent commits, including an editorial change by `awkawk` and several updates to the `css`, `guidelines`, `requirements`, `script`, and `understanding` folders.

Repository: `w3c / wcag21`

Unwatch 83 Star 85 Fork 49

Code Issues 78 Pull requests 39 Projects 0 Wiki Insights

WCAG 2.1 and support materials

1,398 commits 84 branches 68 releases 18 contributors


Branch: `master` New pull request Create new file Upload files Find file Clone or download


`awkawk` Editorial change ... Latest commit 775484e 10 hours ago


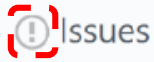
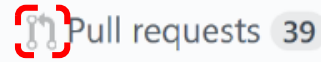



<code>css</code>	CSS for all files	a year ago
<code>guidelines</code>	Editorial change	10 hours ago
<code>requirements</code>	https a crap load of links to reduce link report noise	2 months ago
<code>script</code>	Merge pull request #737 from w3c/intro-edits	12 hours ago
<code>understanding</code>	add lang and charset to understanding	8 days ago

w3c / wcag21

 Unwatch 83


 Star 85

 Fork 49

 Code  Issues 78  Pull requests 39  Projects 0  Wiki  Insights

WCAG 2.1 and support materials

 1,398 commits

 84 branches

 68 releases

 18 contributors

Branch: master

New pull request

Create new file





Upload files

Find file

Clone or download

 lawkawk Editorial change

Latest commit 775484e 10 hours ago

 css	CSS for a	a year ago
 guidelines	Editorial	10 hours ago
 requirements	https a c	2 months ago
 script	Merge p	12 hours ago
 understanding	add lang and charset to understanding	8 days ago

All images

w3c / wcag21

Unwatch 83 Star 85 Fork 49

Code Issues 7

WCAG 2.1 and support

1,398 commits

Branch: master

New pull request

new file

Upload files

Find file

Clone or download

18 contributors

Essential – representing either a brand-logo or a real-life picture.

These can be ignored.

lawkawk Editorial change

Latest commit 775484e 10 hours ago

css	CSS for all files	a year ago
guidelines	Editorial change	10 hours ago
requirements	https a crap load of links to reduce link report noise	2 months ago
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This repository

Search

Pull requests

Issues

Marketplace

Explore



w3c / wcag21

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awkawk Editorial change

css

CS

Not required for understanding – has text.

guidelines

Ed

These can also be ignored.

requirements

ht

script

Merge pull request #737 from w3c/intro-edits

understanding

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Latest commit 775484e 10 hours ago

a year ago

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New pull request

Create new file

Upload files

Find file

Clone or download



awkawk Editorial change

Latest commit 775484e 10 hours ago

Required for understanding – check graphical object contrast



css

CS

a year ago



guidelines

Ed

10 hours ago



requirements

https a crap load of links to reduce link report noise

2 months ago



script

Merge pull request #737 from w3c/intro-edits

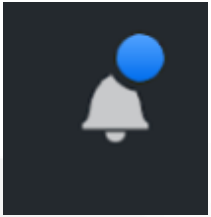
12 hours ago



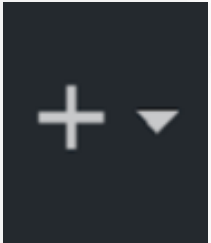
understanding

add lang and charset to understanding

8 days ago



Light bell shape – 8.9:1
Blue circle – 5.4:1



Plus Shape – 8.9:1
Down arrow – 8.9:1



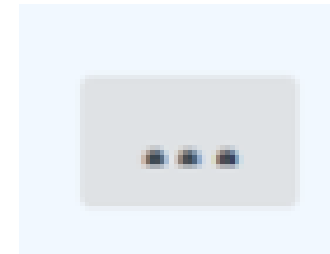
Down arrow – 8.9:1



Down arrow – 13.5:1



Down arrow – 2.4:1
(Fail)



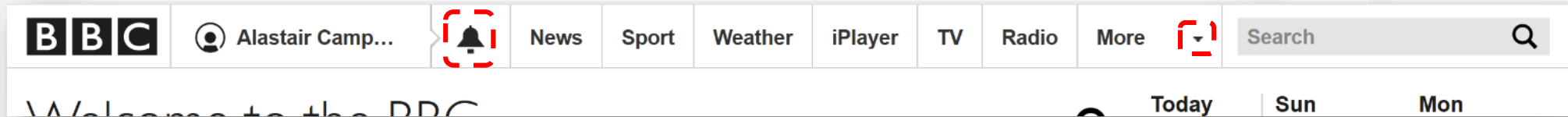
Three dots – 6.6:1



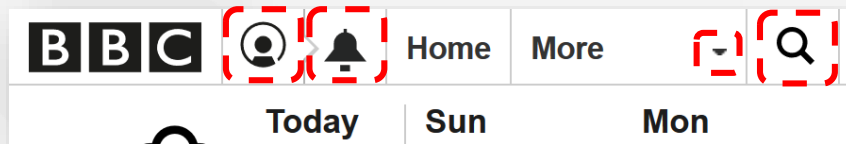
Folder – 3:1

Responsive page variations

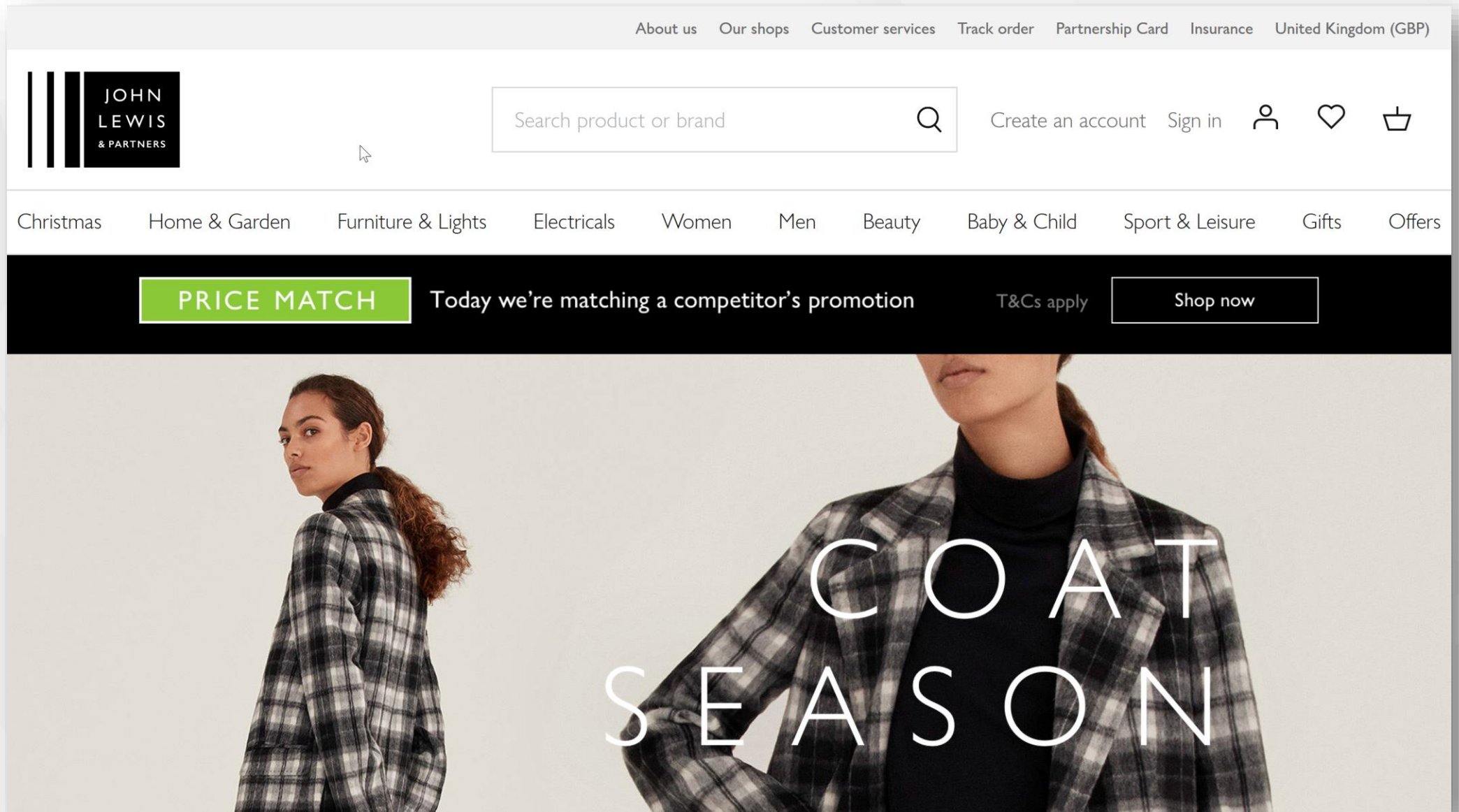
- BBC Homepage full width



- BBC Homepage smaller, more graphics relied on for understanding




Content on Hover or Focus








Content on Hover or Focus

[About us](#) [Our shops](#) [Customer services](#) [Track order](#) [Partnership Card](#) [Insurance](#) [United Kingdom \(GBP\)](#)



[Create an account](#) [Sign in](#)   


[Christmas](#) [Home & Garden](#) [Furniture & Lights](#) [Electricals](#) [Women](#) [Men](#) [Beauty](#) [Baby & Child](#) [Sport & Leisure](#) [Gifts](#) [Offers](#)




Furniture by Room	Furniture by Type	Lighting	Lighting By Room	Don't Miss	
Bedroom	Beds	Sofas & Armchairs	View all Lighting	Garden & Outdoor Lighting	20% off John Lewis & Partners floor lamps
Living Room	Mattresses	Sofa Beds	Ceiling Lighting	Bathroom Lighting	15% off selected designer lighting
Dining Room	Wardrobes	Coffee Tables	Wall Lighting	Kitchen Lighting	New in: Palazzo Collection
Kitchen	Bedside Tables	Side Tables	Desk & Table Lamps	Children's Lighting	New in: House by John Lewis
Bathroom	Chests of Drawers	Console Tables	Floor Lamps		New in: Sofas & Armchairs
Children's	Dressing Tables	TV Stands	Ceiling & Lamp Shades		John Lewis & Partners Natural Collection
Nursery	Headboards	Cabinets & Sideboards	Line, Fairy & Novelty Lights		
Home Office	Bookcases, Shelving	Dining Tables	SAD & Wake Up Lighting		
Hallway	Units & Shelves	Dining Chairs	Cabinet Lighting		
Garden	Office Desks	Dining Furniture Ranges			
	Office Chairs				



Content on Hover or Focus

[About us](#) [Our shops](#) [Customer services](#) [Track order](#) [Partnership Card](#) [Insurance](#) [United Kingdom \(GBP\)](#)



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Hallway	Units & Shelves	Dining Chairs	Cabinet Lighting		
Garden	Office Desks	Dining Furniture Ranges			
	Office Chairs				



Content on Hover or Focus

Furniture by Type		Lighting	Lighting
Beds	Sofas & Armchairs	View all Lighting	Garden Lighting
Mattresses	Sofa Beds	Ceiling Lighting	Lighting
Wardrobes	Coffee Tables	Wall Lighting	Bathroom Lighting
Bedside Tables	Side Tables	Desk & Table Lamps	Kitchen Lighting
Chests of Drawers	Console Tables	Floor Lamps	Children's Lighting
Dressing Tables	TV Stands	Ceiling & Lamp Shades	
Headboards	Cabinets & Sideboards	Line, Fairy & Novelty	



What's new - Cognitive

- **Identify Input Purpose (AA):** can be identified .
- **Identify Purpose (AAA):** is added to controls, symbols & regions.
- **Timeouts (AAA):** If data might be lost due to timeouts, warn the user.



Identify Input Purpose

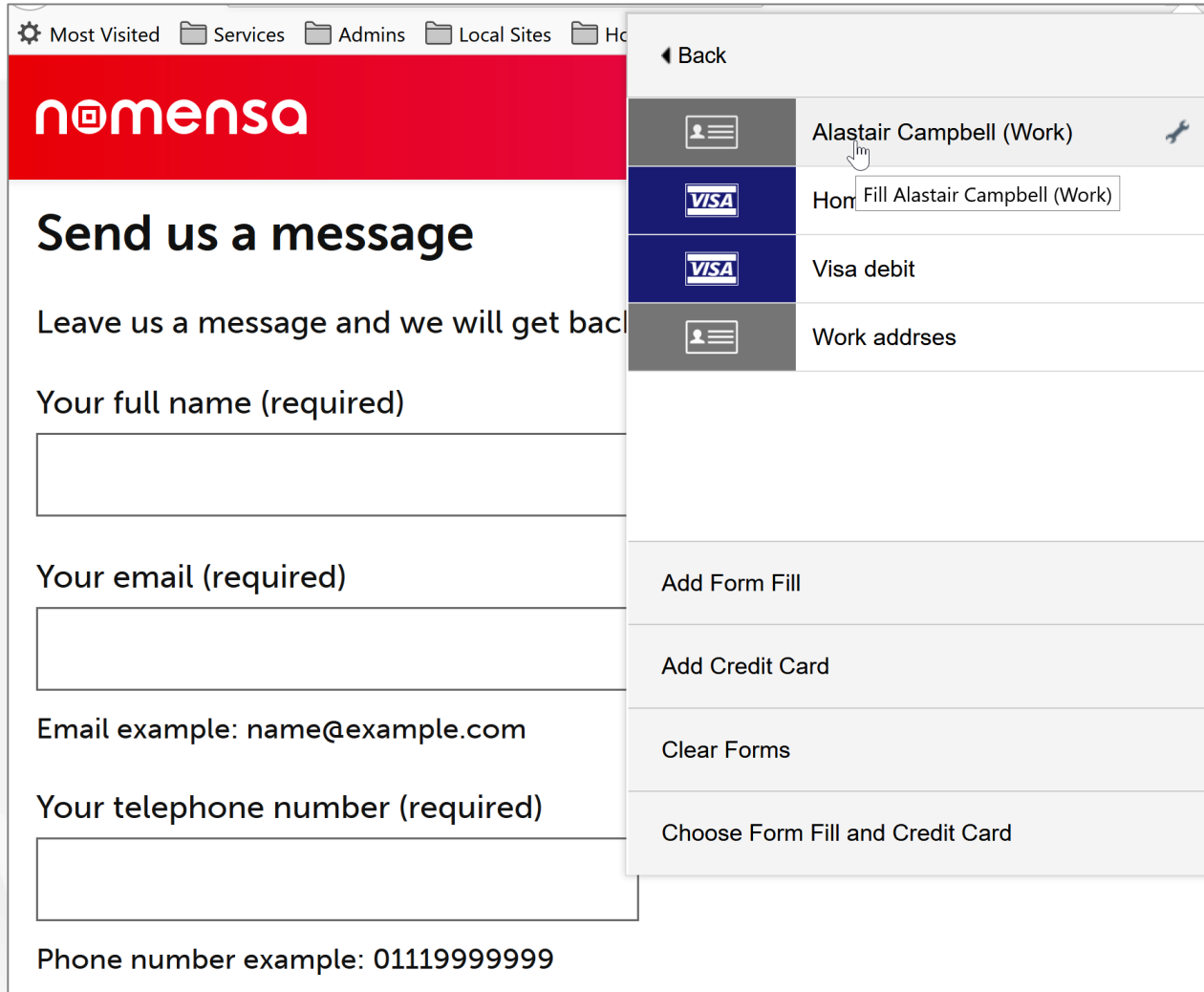
Started as ‘personalisation’, but changed to:

“The purpose of each input field collecting information about the user can be programmatically determined when:

- The input field serves a purpose identified in the Input Purposes for User Interface Components section; and
- The content is implemented using technologies with support for identifying the expected meaning for form input data.”

Token	Description
name	Full name
honorific-prefix	Prefix or title (Mr., Mrs. Dr., etc.)
given-name	Given or first name
additional-name	Additional or middle name

Autocomplete



The screenshot shows a web browser window with the nomensa website. The browser's address bar shows the URL "http://localhost:8080/nomensa/". The website has a red header with the "nomensa" logo. Below the header, there is a section titled "Send us a message" with the text "Leave us a message and we will get back to you." followed by four form fields: "Your full name (required)", "Your email (required)", "Email example: name@example.com", and "Your telephone number (required)". An autocomplete dropdown menu is open, showing a list of suggestions: "Alastair Campbell (Work)", "Fill Alastair Campbell (Work)", "Visa debit", and "Work addrses". The dropdown menu also includes a "Back" button and a "Choose Form Fill and Credit Card" button.

Most Visited Services Admins Local Sites Hc

Back

nomensa

Send us a message

Leave us a message and we will get back to you.

Your full name (required)

Your email (required)

Email example: name@example.com

Your telephone number (required)

Phone number example: 01119999999

Alastair Campbell (Work)

Fill Alastair Campbell (Work)

Visa debit

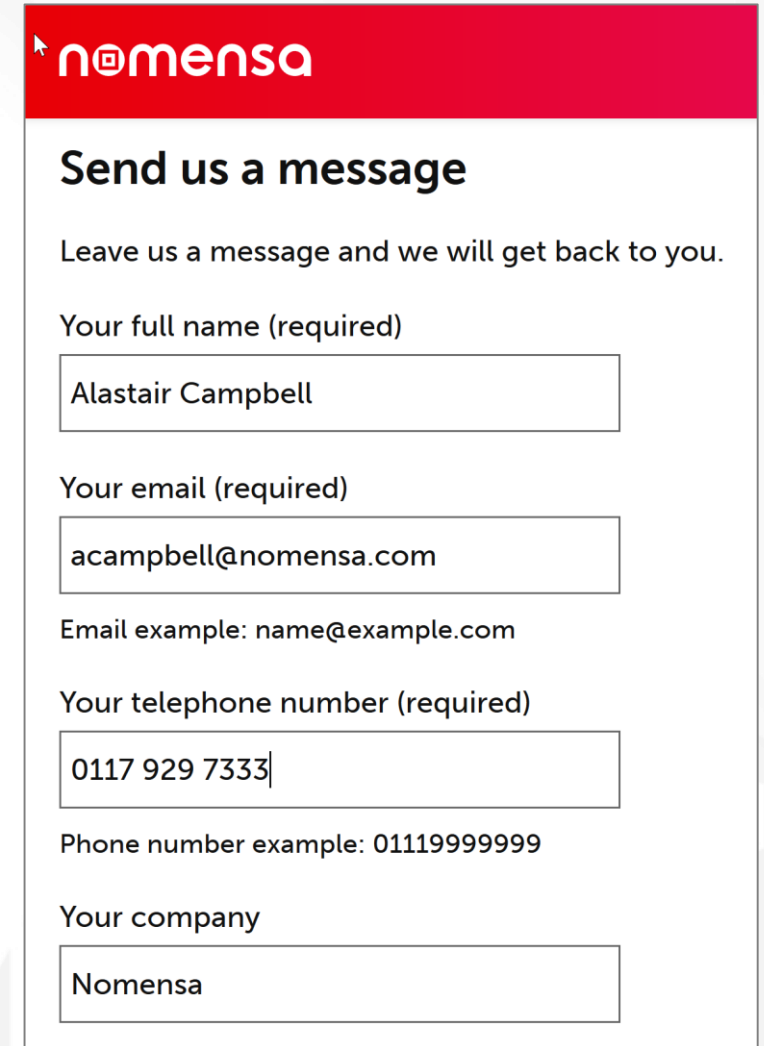
Work addrses

Add Form Fill

Add Credit Card

Clear Forms

Choose Form Fill and Credit Card



The screenshot shows the nomensa website with the "Send us a message" form filled out. The form fields are: "Your full name (required)" with the value "Alastair Campbell", "Your email (required)" with the value "acampbell@nomensa.com", "Email example: name@example.com", "Your telephone number (required)" with the value "0117 929 7333", "Phone number example: 01119999999", and "Your company" with the value "Nomensa".

nomensa

Send us a message

Leave us a message and we will get back to you.

Your full name (required)

Alastair Campbell

Your email (required)

acampbell@nomensa.com

Email example: name@example.com

Your telephone number (required)

0117 929 7333

Phone number example: 01119999999

Your company

Nomensa

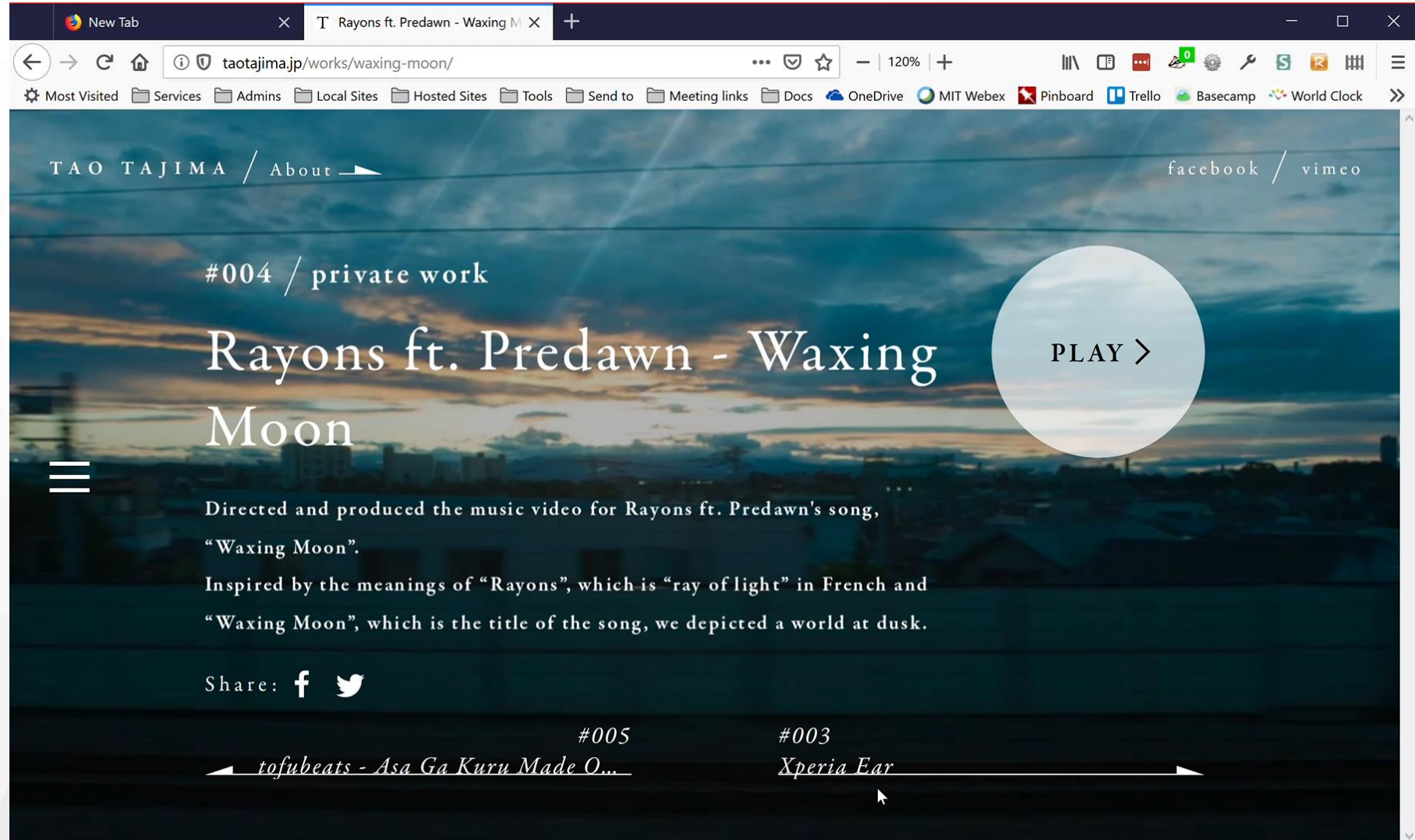


Other criteria

- **Animation from Interactions:** Allow users to turn off animations from scrolling (e.g. parallax)
- **Status Messages:** Notify users when something changes on the page (e.g. ARIA live)



Animations from interactions – Vestibular trigger!





Status updates

Where content is updated away from the focus, make sure it is 'programmatically' available.

Gov.uk Character count demo uses `aria-live` to enable this.

Character count demo

How should we improve this page?

Testing sdfgsdf

You have 185 characters remaining

The screenshot shows a web browser window with the 'Inspector' tab open. The HTML structure of the character count demo is displayed. The `<div class="form-group">` element contains a `<label class="form-label-bold" for="description-field">` and a `<textarea id="description-field" class="form-control js-char-count govuk-c-charcount" name="description" rows="5" aria-required="true" maxlength="" aria-describedby="description-field-info" data-maxlength="200">`. Below the `<textarea>` is a `You have 185 characters remaining`. The `aria-live="polite"` attribute is highlighted in blue, indicating its role in making the status update accessible to screen readers.

```
<div class="form-group">
  <label class="form-label-bold" for="description-field">...</label>
  <textarea id="description-field" class="form-control js-char-count govuk-c-charcount" name="description" rows="5" aria-required="true" maxlength="" aria-describedby="description-field-info" data-maxlength="200">
  <span id="description-field-info" class="form-hint govuk-c-charcount__message" aria-live="polite">You have 185 characters remaining</span>
</div>
```

What to do?

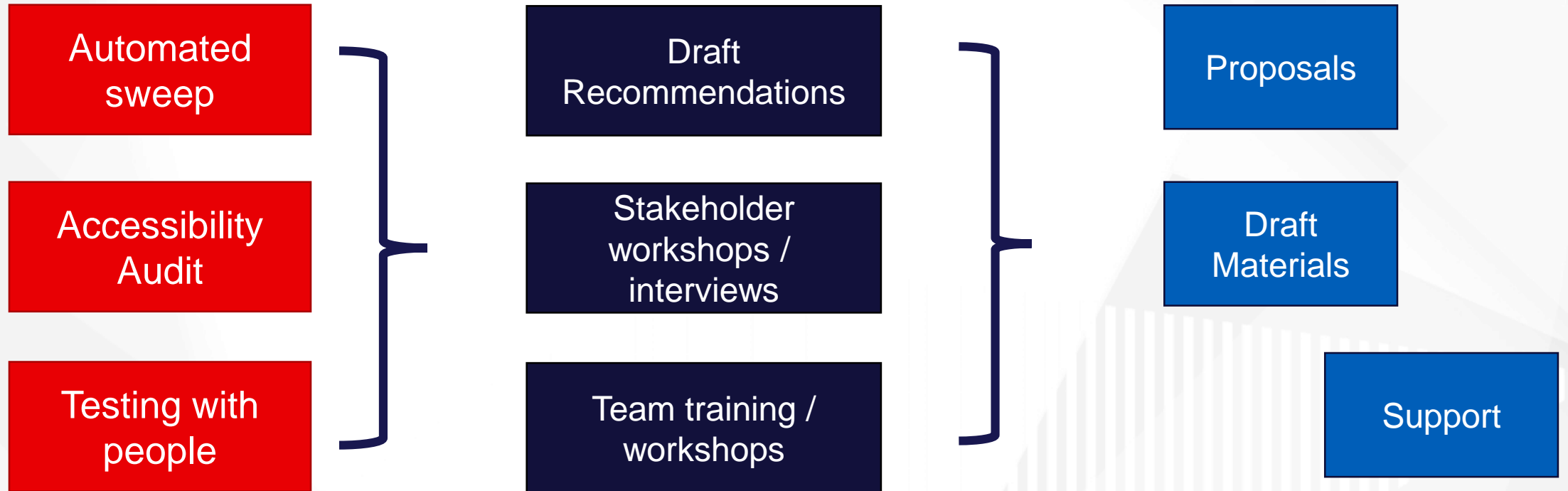


0-60mph in accessibility

Guidelines are a ***baseline*** for creating accessible interfaces.

- Establish your current issues / barriers
- Training to ensure the team understand the core requirements
- Work out when and who should apply each
- Integrate with:
 - Brand guidelines, Pattern libraries (Design system), Documentation
 - Design, Development, Content
- Test early, little and often
- Test with people when possible
- Feed the results back into your artefacts and process

NHS Case study





Testing

Automated	Audit	Summary	NHS.UK (Wagtail)	Find & Compare	One You	Calculators	New video	Start4Life	Live well	Change4Life	Video Pages
1.1.1	1.1.1	Alt text missing / placeholder	Y	Y (Aud)	Y (Aud)	Y (Aud)					
2.1.1	2.1.1	Onclick handlers	Y	Y (Aud)	Y (Aud)	Y (Aud)	Y (Aud)				
4.1.2		Dodgy ARIA usage		Y				Y			
1.3.1 (4)	1.3.1 (labels)	Labels not attached	Y	Y (Both)	Y (Aud)	Y (Aud)		Y	Y		
4.1.2 (2)		Empty buttons						Y		Y	
2.4.2		Empty page titles						Y			
1.3.1		Empty Headings	Y						Y	Y	Y
1.1.1 (2)		Empty links	Y	Y							
1.3.1 (2)		Tables for Layout	Y	Y				Y			
1.3.1 (3)		Lack of legends		Y							
1.3.1 (5)	1.3.1	iFrames without titles					Y (Aud)	Y			
2.4.4	2.4.4	Read more links	Y (Aud)	Y (Both)	Y (Aud)	Y (Aud)					
3.1.1		Include language attributes on HTML	Y					Y			
1.3.6 (6)		Incorrect table markup		Y							
4.1.1		Incorrect nesting	Y	Y	Y			Y	Y	Y	
3.1.2		Lang attributes for words	Y								
2.4.1	2.4.1	Broken skip link			Y (Aud)			Y			
	1.2.3 / 1.2.5	Audio description	Y		Y		Y				
	1.3.1 (Headings)	Heading structure	Y	Y		Y					
	1.3.1 (Landmarks)	Use of landmarks			Y						
	1.3.1 (lists)	Use lists when appropriate	Y	Y	Y	Y					
	1.3.1 (fieldset)	Using fieldsets for radio buttons				Y					
	1.3.1 (tables)	Improve table markup		Y		Y					
	1.3.1 (associate errors)	Associate errors & info with inputs			Y	Y					
	1.3.5	Input purpose, using autocomplete			Y						
	1.4.1	Use of color		Y		Y					
	1.4.3	Color contrast of text	Y		Y		Y				
	1.4.10	Reflow / responsive		Y							
	1.4.11	Not text contrast	Y	Y		Y					
	1.4.12	Text spacing, allow for			Y	Y					
	2.4.3	Focus order, understandable			Y	Y					
	2.4.7	Focus visible	Y		Y		Y				
	3.2.2	On input, don't change context	Y								
	3.3.1	Error identification			Y	Y					
	3.3.2	Labels or instructions			Y	Y					
	4.1.2	Missing ARIA	Y	Y	Y	Y					
	4.1.3	Status messages		Y							

Automated test:

- 22,500 pages
- 14,000 pages had at least one issue.
- 17 types of issue found

Audit:

- 30 pages
- 26 types of issue found

Testing with people:

- Mostly “usability” issues
- No new interface issues



Automated vs Manual

Focus based on results would be:

Automated testing

- Alt text
- Onclick handlers
- Incorrect labels
- Read more links
- Nesting of HTML markup
- Incorrect ARIA

Manual testing

- Heading structure & list markup
- Non-text contrast & focus styles
- Incorrect labels & fieldsets
- Missing ARIA
- Alt text
- Multimedia alternatives (audio desc)
- Read more links



Requirements by activity

	Requirement	Graphic design	Front-end code	Content	Testers
Keyboard	All functionality is operable with a keyboard.		D/T		T
	Changing a widget (e.g. drop down) doesn't automatically take you somewhere else.		D/T		T
	The location of the keyboard focus is visually obvious.	D	D/T		T
	Skip links are used so people can avoid long lists of	D	D/T		T
	The sequence of content makes sense.		D/T		T
Magnification	You can zoom in 400% without losing content /	D	D/T		T
	Text has a reasonable buffer, text containers are not fixed height.		D/T		T
	There is decent contrast for reading text. (Test new colour combinations with CCA).	D/T	T		T
	There is decent contrast for graphics (that don't have text) and inputs/controls/focus styles.	D/T	T		T
Screenreader	Each (non-decorative) image has appropriate alt text.		D	D/T	T
	The HTML structure & semantics reflects the intent.	D	D/T		T
	Landmarks are used when possible: main, banner, navigation, search & contentinfo	D	D		T
	Headings are in sections & sub-sections	D	D	D	T
	Lists are used appropriately (ul, ol, dl)	D	D	D	T
	Data tables are used appropriately	D	D	D	T
	Language is set for the page and changes in content		D/T		T
	Form controls are properly labeled, and error messages are available by the relevant input.	D	D	D	T
	When there is multimedia you can work out what is going on from the audio or include audio description or Don't rely on colour or location. E.g. "press the red button on the right".	D	D	D	T
	You can tell where a link takes you. (E.g. "Click here" is not suitable.)	D	D/T	D/T	T
	Page titles are unique and useful.		D/T	D/T	T
	Use standard controls, or ensure that non-standard controls are properly marked up using WAI-ARIA.	D	D/T		T
	Use aria-status/live for important messages away from the current focus.		D/T		T
	The content is easy to understand (and explains any jargon).	D	D	D	T
	Autocomplete is used on inputs when appropriate.		D/T		T
Cognitive & De	Multimedia: You can work out what is going on from the visuals or alternatives.		D	D/T	T
	Terms used for functionality are consistently used.	D	D	D	T
	Error messages are actually useful, e.g. provide a useful next step or way of entering valid data.	D	D/T	D/T	T

Analysis of process & results, working out what activity should define each accessibility requirement.

Of 50 WCAG (AA) criteria:

Policy: 14

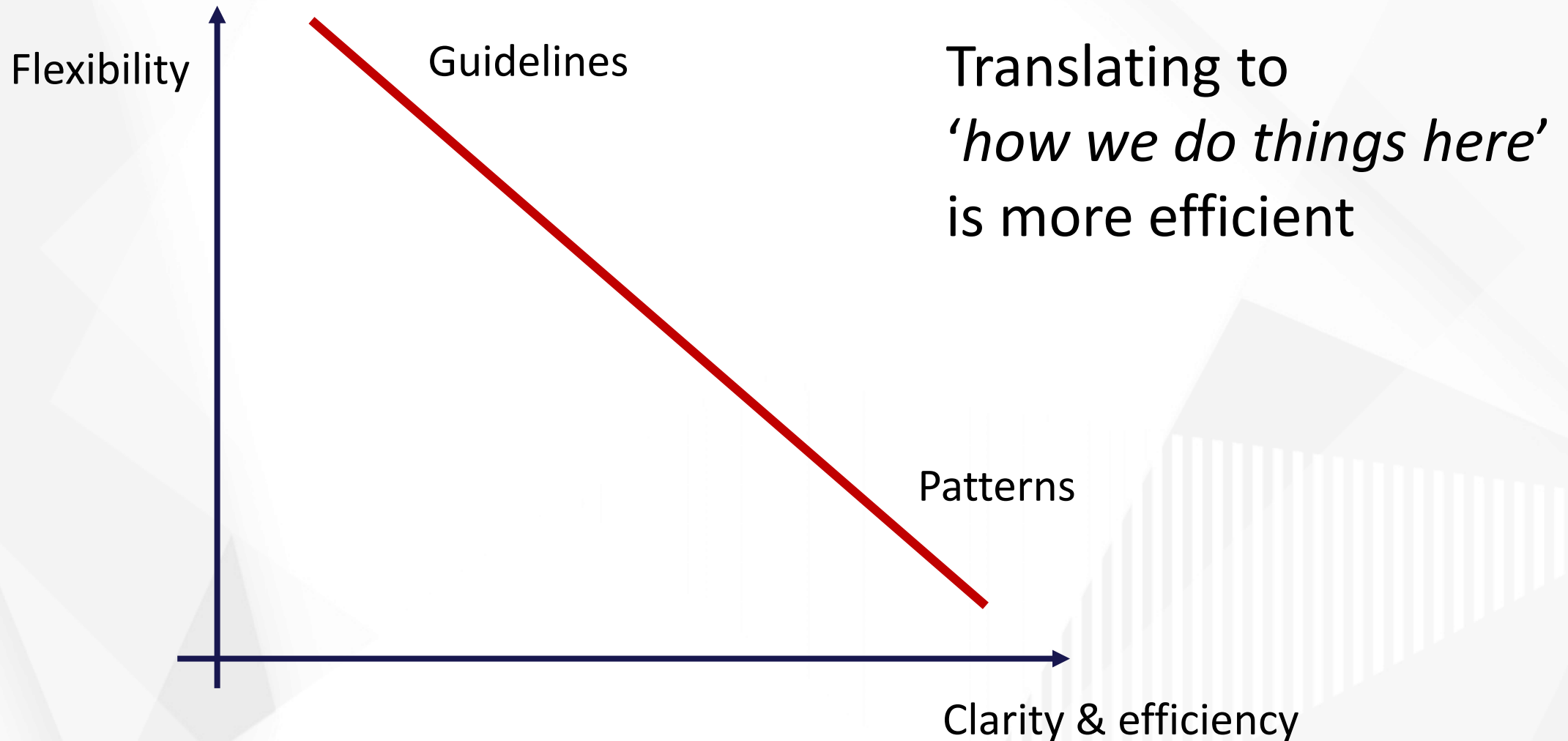
Graphic design: 17

Front-end code: 28

Content design: 13

Testers: 50

Guidelines vs Patterns

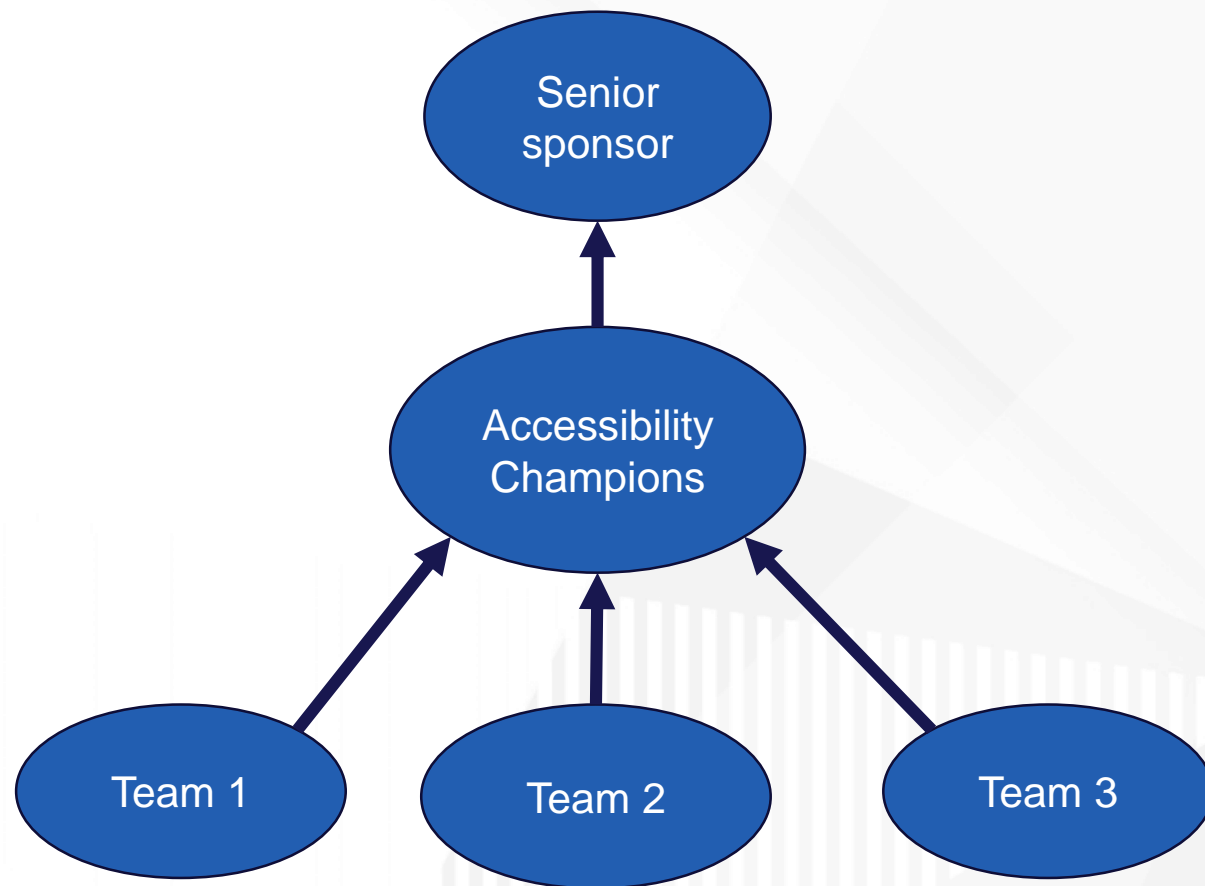




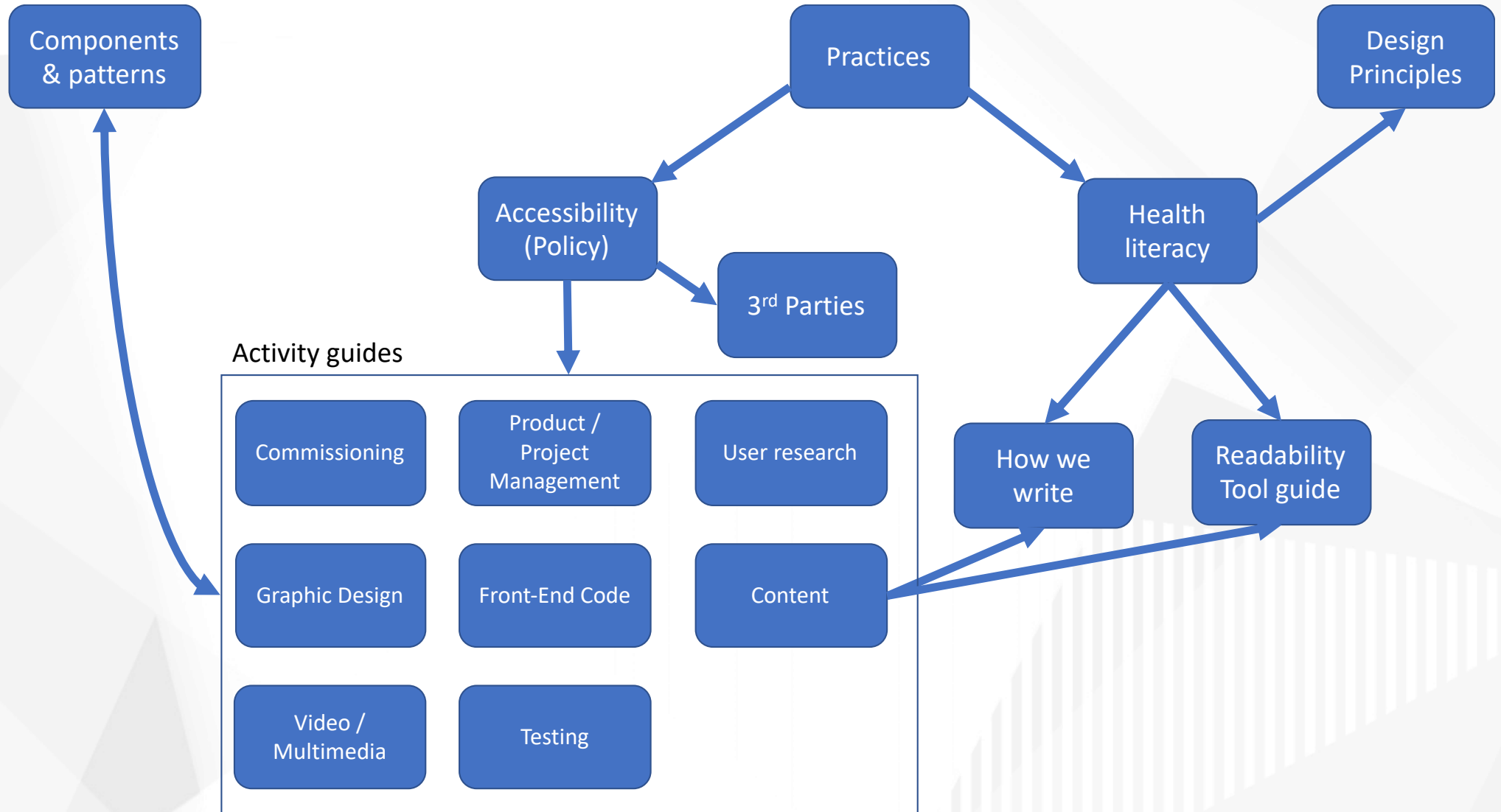
Accessibility working group

Distributed function, central responsibility

- At least 1 person from each team
- Regular meetings (monthly?)
- Empathy lab
- Tackle issues, process, resources
- Report to a senior stakeholder
- Ensure new research feeds into resources
- Sponsor is point of escalation



Activity guides





Activity guides

Draft content

Graphic design

Defining focus styles

(WCAG 2.4.7)

Users should be able to access all interactive components with a keyboard alone and it should be clear which element or link has focus.

Define focus styles to guide the user, to clearly identify their current position on the page. The browser default indicator is generally not good enough.

Good examples:



How to test:

Use a [tool](#) (link TBC) which calculates the ratio between the colour of the focus indicator and background colour it is replacing. The ratio should meet minimum of 3:1.

Service Manual



Digital service manual

[Home](#) > [Practices](#)

Make your service accessible

The NHS is for everyone, so everything we create must be accessible to everyone, considering different needs and abilities.

Expectations

Here's what we expect all project teams to commit to at NHS Digital.

Consider accessibility at every stage

Think about how you are going to address accessibility at the beginning and at every stage of your project.

It's much harder to make a service accessible if it's only addressed late on.



Make guidelines your own – medical parallel

“When it was introduced without any programme or support, it was just impossible for teams to buy into it”

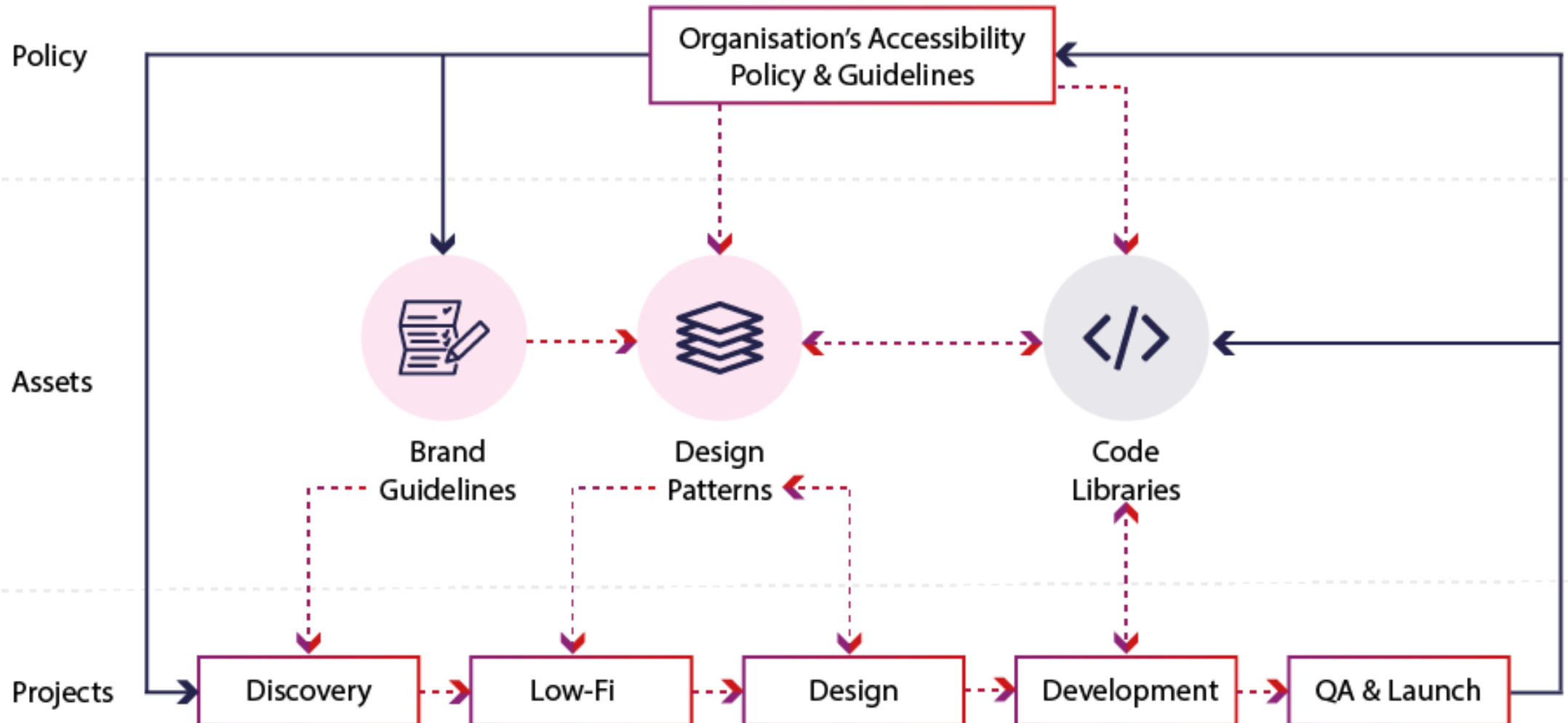
Psychologist & researcher Stephanie Russ

The creator of the checklists said that each hospital should customise it:

“They were 95% the same, but that 5% made it work for them . Every one of these hospitals thought that theirs was the best.”

Peter Pronovost, Johns Hopkins University

Inclusion of accessibility guidelines





Type to search

eBay MIND Patterns

Introduction

Messaging

Alert

Flyout Notice

Form Validation

Inline Notice

Input Meter

Input Validation

Page Notice

Time

Input

Autocomplete

Button

Checkbox

Combobox

Confirm

Menu



Flyout Notice

We had trouble connecting to PayPal. Please make your payment later. X

Congrats! You are currently the high bidder, but you are close to getting outbid. X

Introduction

The flyout notice pattern is a system-activated [flyout](#). It draws the user's attention to a specific element or region on the page.

A flyout notice is typically classified as either high or low priority.

An error that prevents an action or task is high-priority, anything else can be considered low priority.

Working Examples



Type to search

eBay MIND Patterns

Introduction

Messaging

Alert

[Flyout Notice](#)

Form Validation

Inline Notice

Input Meter

Input Validation

Page Notice

Time

Input

Autocomplete

Button

Checkbox

Combobox

Confirm

Menu

Interaction Design

This section provides guidance for keyboard, screen reader and pointing devices.

Keyboard

Please refer to the [flyout](#) pattern for all inherited keyboard interactions.

Screen Reader

If high-priority, notice **must** be announced.

If high-priority, notice **must** be listed as a region/landmark.

Please refer to the [flyout](#) pattern for all inherited screen reader interactions.

Pointer

Please refer to the [flyout](#) pattern for all inherited pointer interactions.

Developer Guide

Developer guide coming soon.



Next steps

- Review the guidelines in the light of your people & processes
- Create your internal standard, with WCAG as core, and build on it
- Run usability testing, and feed that back in to your internal standard
- Join up and help with creating techniques for WCAG 2.1!



Key links

- WCAG 2.1: <https://www.w3.org/TR/WCAG21/>
(Don't forget the 'understanding' links)
- Issues & comments: <https://github.com/w3c/wcag/>
- How to use guidelines:
<https://www.nomensa.com/blog/2017/web-accessibility-guidelines-and-how-use-them>
- Overview of new guidelines:
<https://www.nomensa.com/blog/2018/wcag-21-accessibility-recommended>

“The results of inclusive design for accessibility always leads to a better product for everyone.”

Head of Xbox, Phil Spencer



Questions?

@alastc

