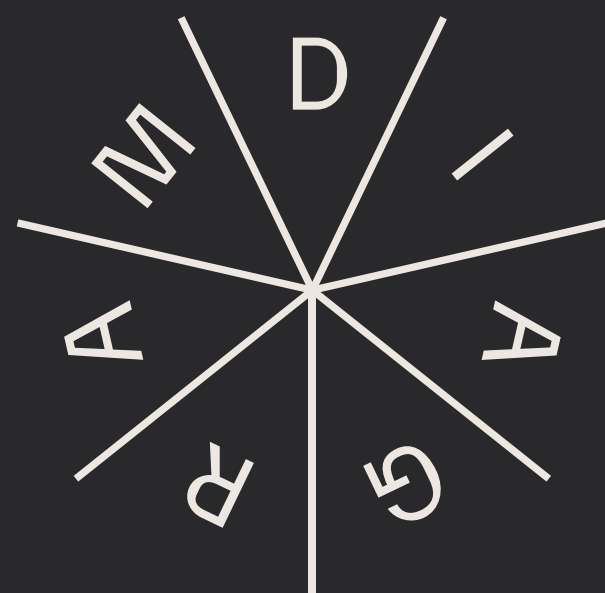


BUILDING ACCESSIBILITY INTO YOUR WORKFLOW

A playbook for good design.





Hi, I'm Dennis

Good design = accessible design.



“A free, open, creative space for everyone. That vision is only possible if we get everyone online, and make sure the web works for people.”

—Sir Tim Berners-Lee, W3C Director and inventor of the World Wide Web



“The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect.”

—Sir Tim Berners-Lee, W3C Director and inventor of the World Wide Web



Craftsperson's Signature



/* DOCUMENT INFO

- Author: Dennis Kardys

- Date: 9/26/2010

/*

96%

of **home pages** **FAIL** to meet web
accessibility conformance criteria.

THE WEBAIM MILLION
THE 2024 REPORT ON THE ACCESSIBILITY OF THE TOP 1,000,000 HOME PAGES

15-25%

of the **U.S. Population** live with
some form of disability.

FORBES

WEBSITE-ACCESSIBILITY-LAWSUITS-RISING-EXPONENTIALLY-IN-2023-ACCORDING-TO-LATEST-DATA/

How did we get here?

Don't know the rules

Didn't realize there was a problem

It wasn't me

Because the client/boss...

Vic

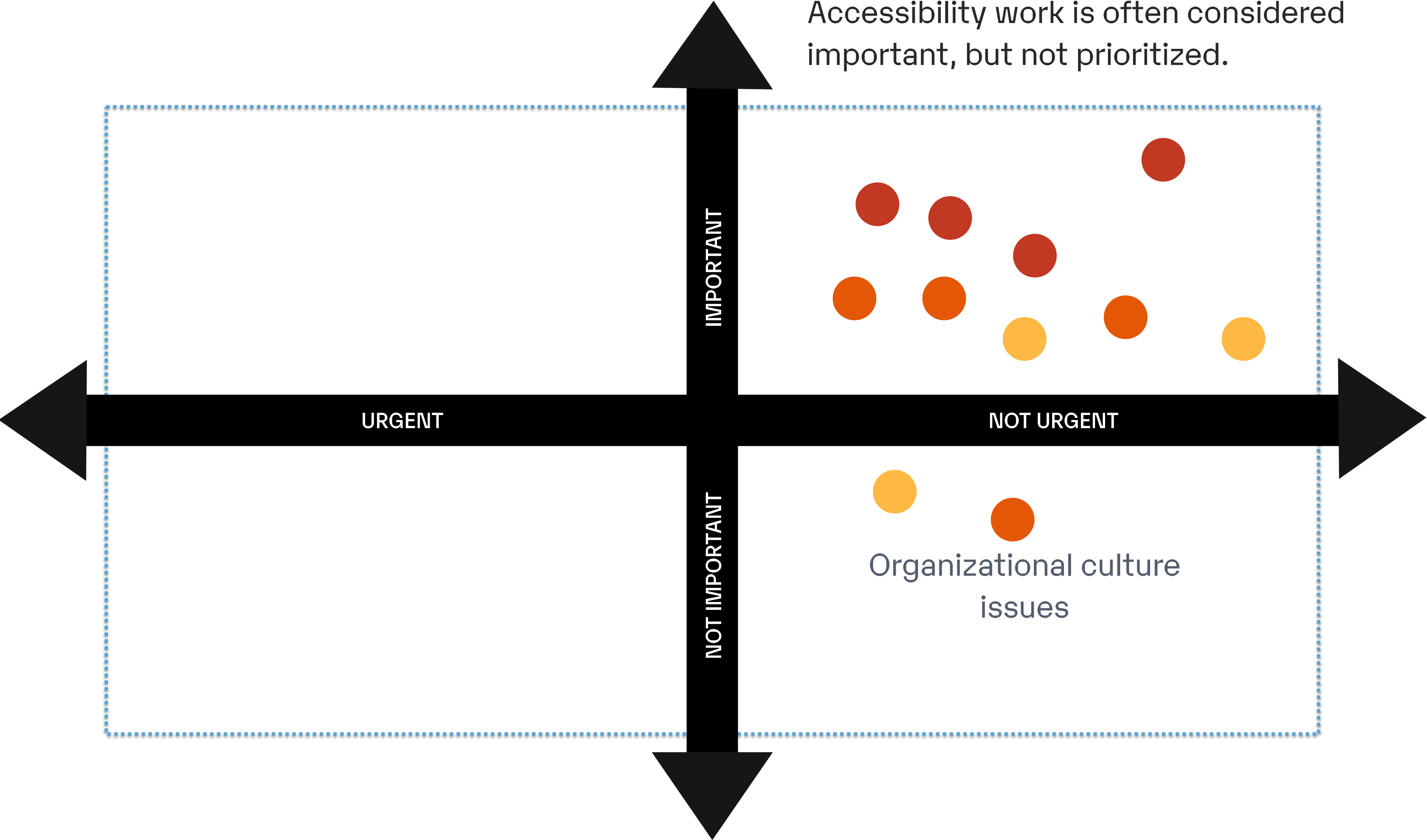
PRODUCT DESIGNER / DEVELOPER

- Works on a small team building Umbraco sites.
- Familiar with standards and general WCAG guidelines.

“I do my best to advocate for accessibility best practices, but my recommendations always seem to be dismissed or backlogged.”

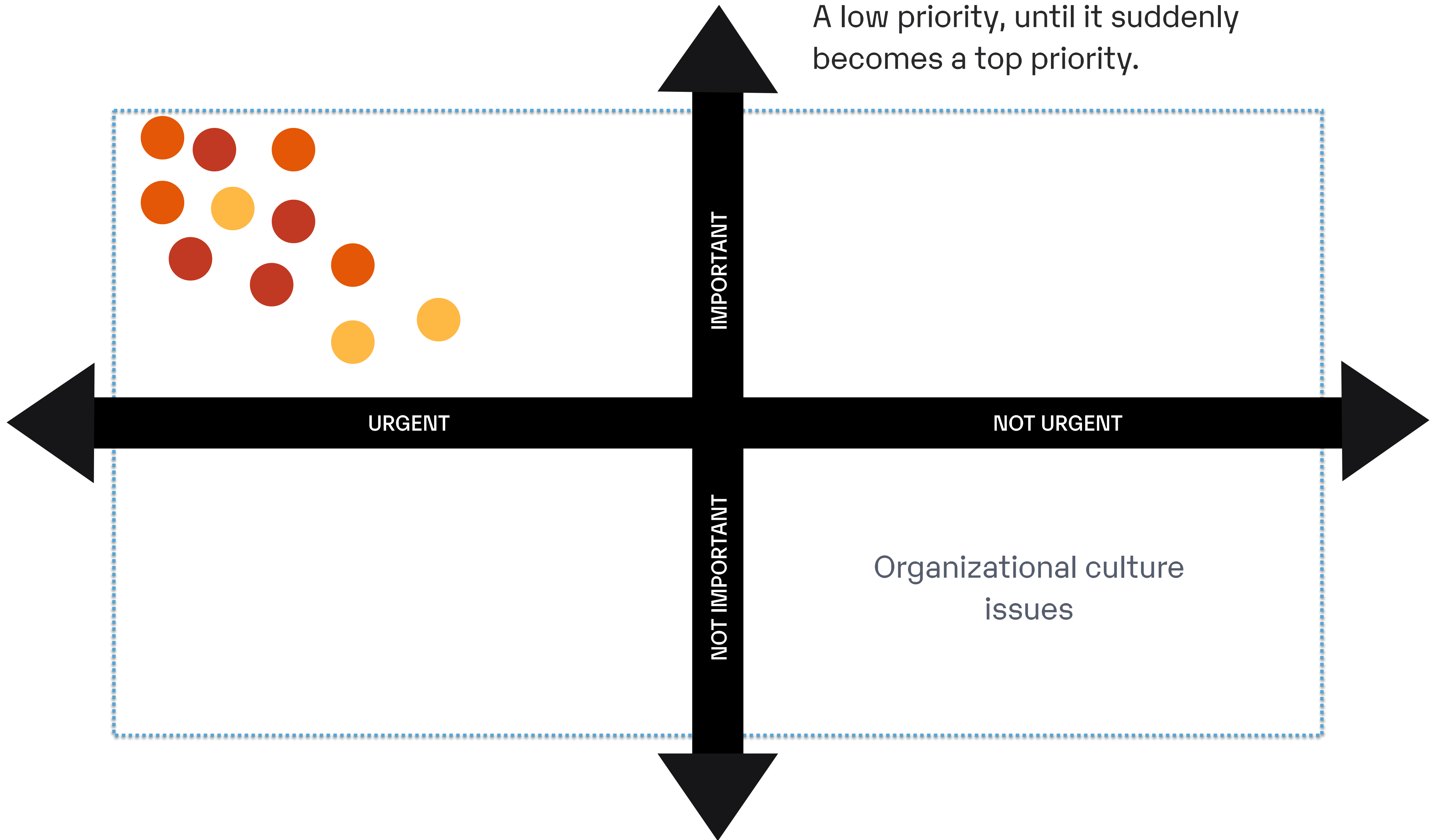


Accessibility work is often considered important, but not prioritized.



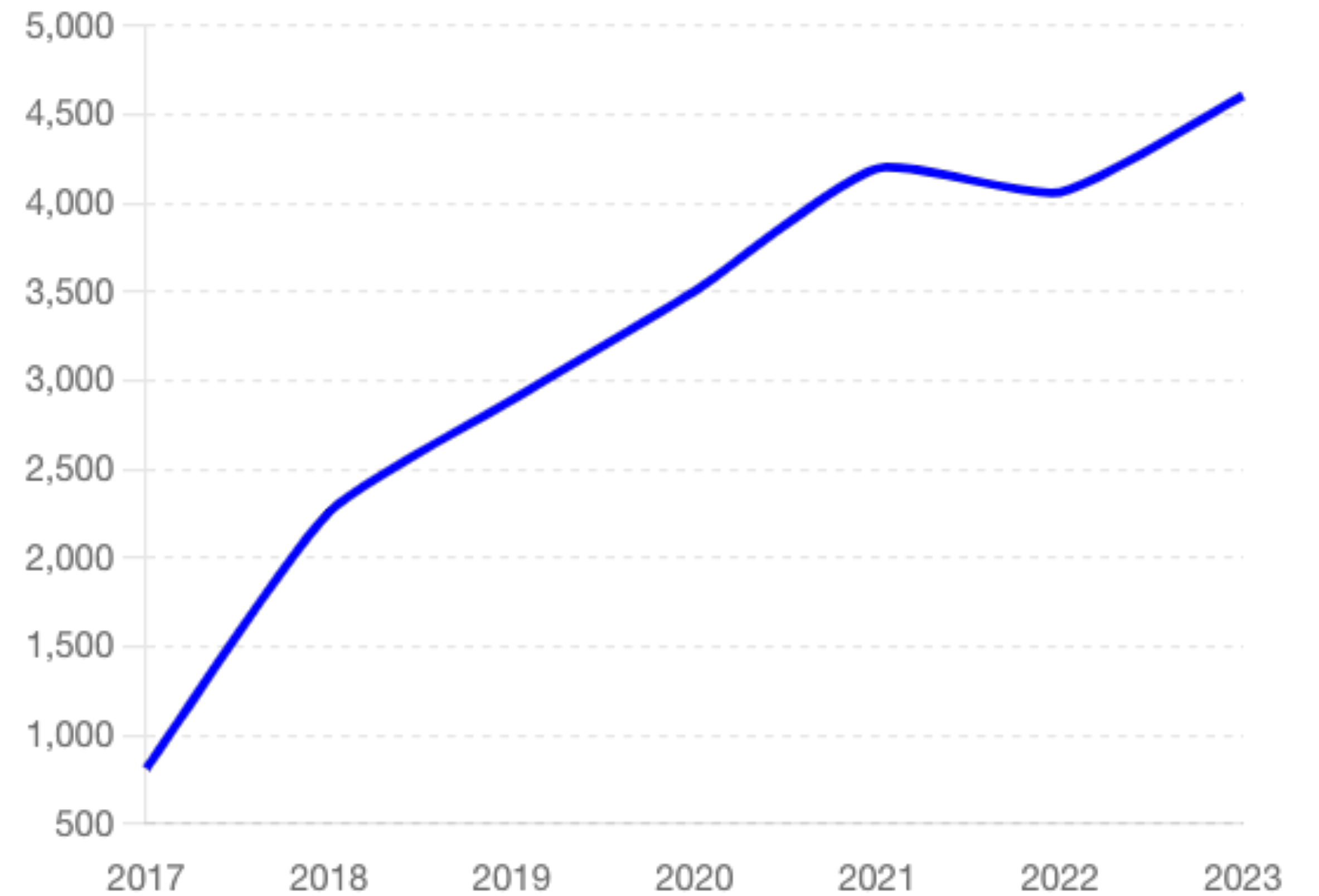
Organizational culture issues

A low priority, until it suddenly becomes a top priority.





ACCESSIBILITY LAWSUITS INCREASED DRASTICALLY FROM 2017 - 2023.



Notice: **ADA Website Compliance Lawsuit**






Predatory Law Firms

This includes many “tester plaintiffs” who seek out website issues with the intention to pressure businesses to settle.

- 10 Plaintiff law firms are responsible for 82% of all Digital ADA lawsuits.
- 77% of lawsuits are being filed against organizations with under \$25 million in revenue.
- Small businesses targeted because they have limited means to defend themselves.



A silver lining??!

-  Budget approval
-  Priority to work on
-  Skill and ability to fix things

The background of the slide is a photograph of a beach. In the foreground, the sandy shore is visible with some seaweed. Several people's feet and lower legs are visible at the bottom of the frame, wearing various styles of sneakers. In the middle ground, the ocean waves are breaking onto the shore. In the background, a person with grey hair is visible from the back, looking out at the sea under a clear blue sky.

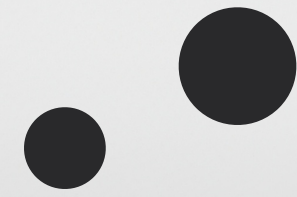
Disclaimer: Your job is to make the errors go away and increase the score.

The fixes will be tedious and time consuming. The recommendations likely require compromises that are unpleasantly received by the same people paying you to find and implement a solution. Perhaps even compromises that were previously suggested and shot down. But now, in the name of accessibility and coerced by the threat of litigation, you will be rushed to deal with hundreds of issues spread across your entire site that have been accumulating for years. And so long as content editors have wysiwyg editors and until your accessibility score increases, your work will never end.

Who's pumped up
about accessibility!?



Is this what we are doing
with our lives?



In the quest for conformance, we can lose sight of the big picture. Of the meaningfulness of our work.

ACCESSIBILITY

The Grey Area

Technically conforms,
but poor UX

Conformant

Meets guidelines,
improves UX

INCLUSIVE DESIGN

THE EXPERIENCE

Everyone
wants to
use it

ACCESSIBILITY

THE ABILITY

Everyone
can use it

A decorative background featuring a light blue-grey field with several large, overlapping circles of varying colors (orange, yellow, green, red, purple, brown). Each of these circles is filled with a dense pattern of smaller dots in the same color family. In the center of the image is a white circle with a thick black border, containing the text 'DIVERSITY OF ABILITY'.

DIVERSITY OF ABILITY

Examples of Disability

PHYSICAL OR MOTOR

VISUAL

NEURO/COGNITIVE

HEARING

Assistive Technology

OS BASED TOOLS

Built-in Voice/speech, magnification, captioning

SOFTWARE BASED TOOLS

Screenreaders (JAWS/NVDA), speech to text, reading assistants

HARDWARE

Switches, wands, sticks, eye-trackers



**HAVE YOU
EVER?**

- ☐ Had a slow connection; data limit
- ☐ Let your keyboard or mouse die
- ☐ Used a phone with a broken screen
- ☐ Injured your arm or hand
- ☐ Worn a wrist splint
- ☐ Forgotten your headphones
- ☐ Visited optometrist after age of 40
- ☐ Walked a dog
- ☐ Been upset or agitated
- ☐ Been constantly interrupted
- ☐ Been drunk, dazed, or confused?

A photograph showing a person's legs and feet on a sidewalk. The person is wearing blue jeans and dark sneakers. They are holding a white cane with a red band near the handle. The cane is touching a yellow tactile paving surface, which consists of a grid of small, raised, dome-shaped bumps. The sidewalk is made of light-colored concrete. To the right of the sidewalk is a dark asphalt road. The text "#curb-cut effect" is overlaid in white on the image.

#curb-cut effect

“Accessibility is just
personalization that takes into account
human diversity.”

— Bryce Johnson, Inclusive Designer, Microsoft

PLAYBOOK: TACTICS

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1973

Rehabilitation Act

A U.S. law from 1973 prohibiting discrimination based on disability in federal programs and agencies. It's important as it led to accessibility standards (like Section 508) for digital content, ensuring inclusivity.

1990

ADA (Americans with Disabilities Act)

A U.S. law ensuring equal rights for people with disabilities across public life, including employment, services, and digital access. It covers both public and private sectors, making accessibility a broader legal requirement.

1994

World Wide Web Consortium (W3C)

An international organization that develops open standards to ensure the long-term growth of the Web. The W3C's mission is to create protocols and guidelines that foster the interoperability and accessibility of web technologies.

1999

WCAG (Web Content Accessibility Guidelines)

A set of international standards for making web content accessible to all users, especially those with disabilities. The current 2024 standard is WCAG 2.2.

- People using wheelchairs who wanted to ride a bus or train would need to abandon their wheelchairs.
- A restaurant could refuse to serve a person with disabilities.
- A grocery store could prevent a disabled person from buying the goods there.
- If you were gay you could be considered disabled. There was no previous legal definition of disability and homosexuality was considered a disease until 1973.
- Any place of employment could refuse to hire a person just because of his/her disability.
- A person with disabilities could legally be paid less, even if he or she was doing the same work as another person.
- Because the restrooms on trains were not accessible, people often had to wear precautionary diapers when they traveled.

ADA (Americans with Disabilities Act)

A U.S. law ensuring equal rights for people with disabilities across public life, including employment, services, and digital access. It covers both public and private sectors, making accessibility a broader legal requirement.

1990

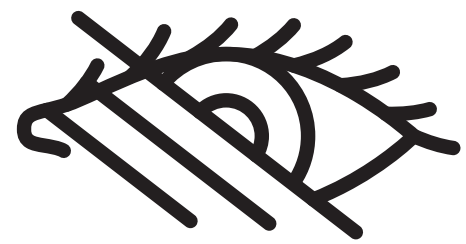


THE US CAPITOL, 1990



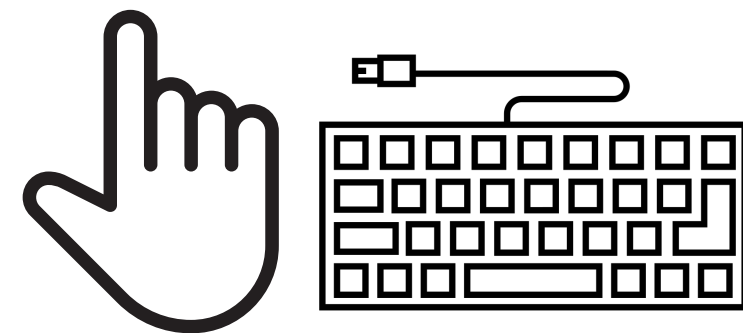
The barriers we design are what
turn a **diversity of ability** into a
“disability.”

POUR



Perceivable

Information must be presented in ways users can perceive (e.g., text alternatives for images).



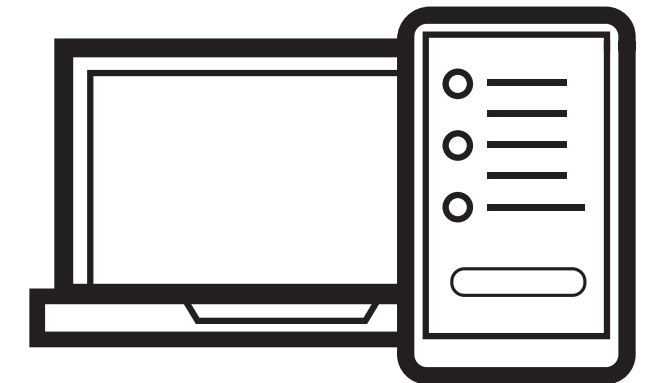
Operable

Users must be able to navigate and use the interface (e.g., keyboard accessibility).



Understandable

Content and controls should be easy to understand (e.g., clear instructions, readable text).



Robust

Content must work well with current and future technologies, including assistive devices.

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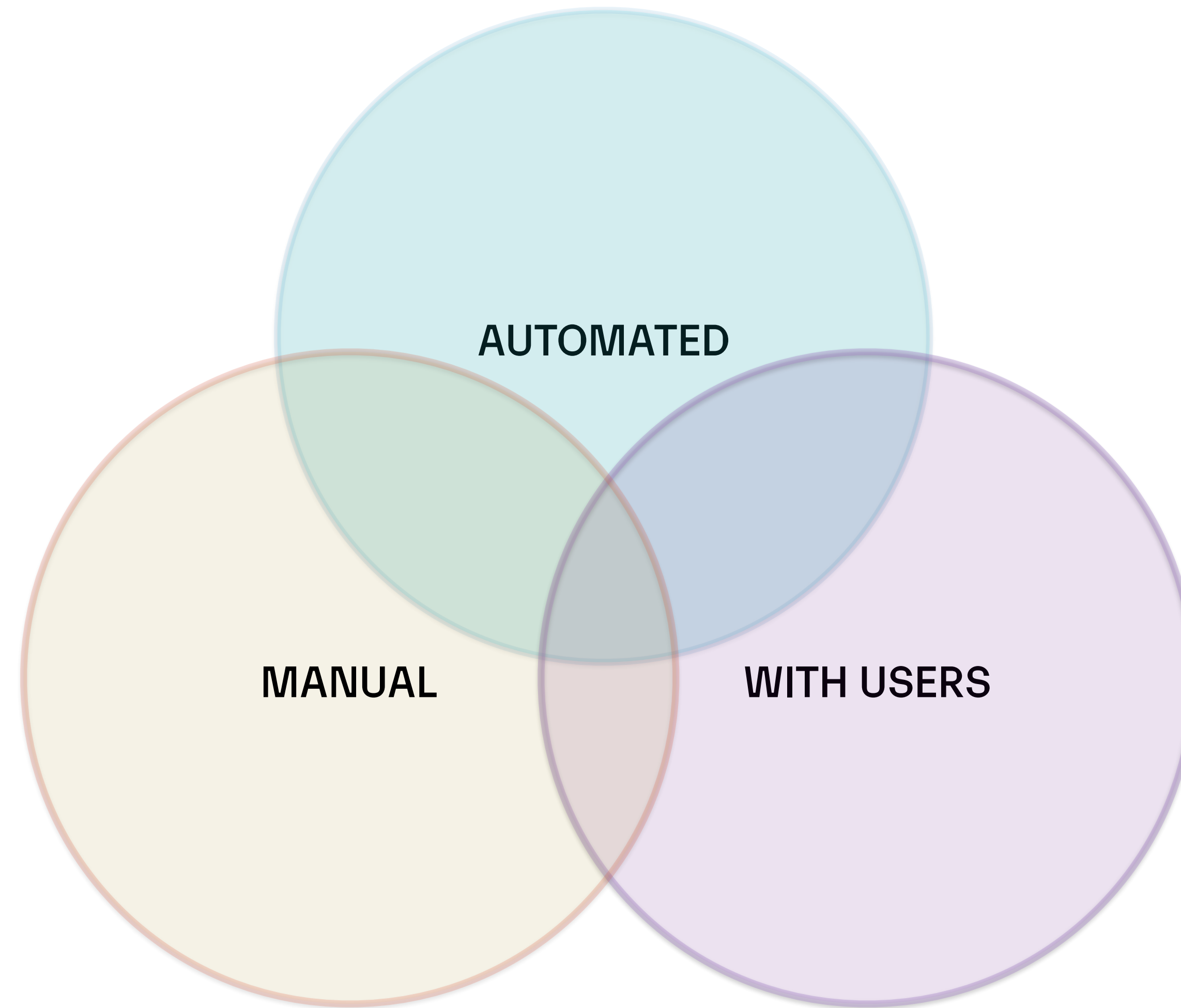
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Combine testing/auditing methods.

Automated Accessibility Audits

Automated accessibility testing uses software tools to evaluate a website for common accessibility issues by scanning the code. They typically generate a grade or score, and provide recommendations for how to remediate issues uncovered.



EFFICIENTLY FINDS ERRORS



GOOD FOR IMPROVING COMPLIANCE



NO NUANCE / FALSE NEGATIVES



CAN EMPHASIZE TEST THEATRICALS



Manual Audits

Manual accessibility testing involves human evaluators assessing a website's usability for individuals with disabilities. Unlike automated testing, which checks for detectable code errors, manual testing focuses on real user interactions. Manual testers typically have checklists or test cases to refer to.



MORE CONTEXTUALIZED



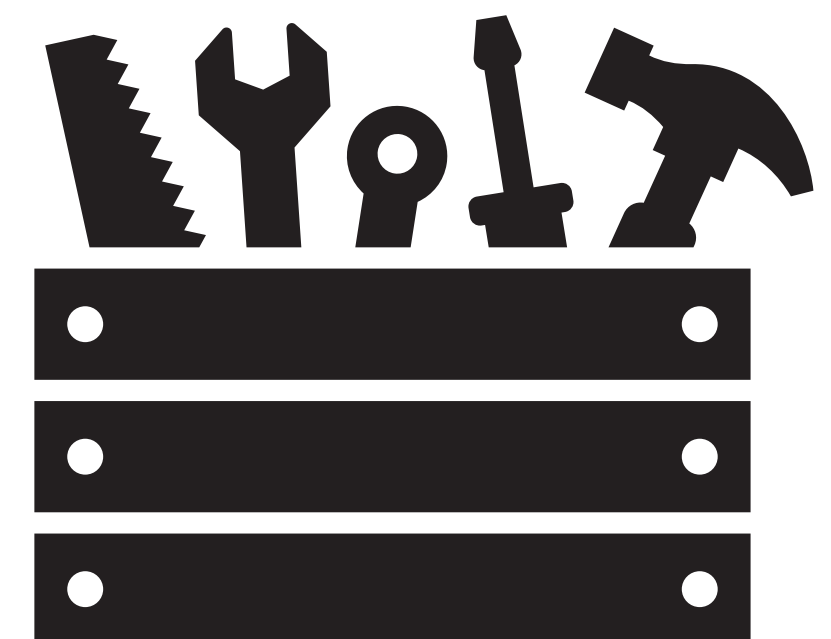
MORE COMPREHENSIVE



LESS EFFICIENT



DIFFICULT TO SCALE



Usability Testing

involves observing real users, including those with disabilities, as they interact with your website. This method helps identify accessibility barriers that automated or manual tests might miss, such as confusing navigation, inaccessible forms, or poor screen reader experiences. By involving users with diverse abilities, you gain insights into how effectively your site supports their needs, ensuring a more inclusive and user-friendly experience.



REAL INSIGHTS



HARDER TO SCHEDULE



COMPLEX ISSUES



HARDER TO QUANTIFY



Most common issues

THE WEBAIM MILLION

Issue	% of Homepages
Low contrast text	81%
Missing alt text for images	54.5%
Missing form input labels	48.6%
Empty links	44.6%
Empty buttons	28.2%
Missing document language	17.1%

WHAT WE USUALLY FIND

- Contrast issues
- Improper use of headings
- Missing aria labels
- Issues navigating with keyboard
- Missing alt-text
- Non-descriptive link text

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01. Skim

02. Sort

03. Strategize

04. Prioritize

Page Title	Page URL	Environment	Issue	Applicable Code	WCAG	Users Affected
Home	https://wearediagram.com/	Win/Chrome/NVDA	Color contrast fails for the unselected slide buttons present within 'Highlights' section and its irregular background color is less than 3.0:1. Element has insufficient color contrast of 1.7:1 (foreground color: #93D5E1 and background color: #24ACC5).		1.4.11 Non-text Contrast (Level AA 2.1)	color blindness, low vision
Home	https://wearediagram.com/	Win/Chrome/NVDA	Color contrast fails in selected state for 'Go to slide 3', and 'Go to slide 4','Go to slide 5', and 'Go to slide 6' buttons present within 'Highlights' section and its irregular background color is less than 3.0:1. Element has insufficient color contrast of 1.7:1 (foreground color: #93D5E1 and background color: #24ACC5).		1.4.11 Non-text Contrast (Level AA 2.1)	color blindness, low vision
Home	https://wearediagram.com/	Win/Chrome/NVDA los/Safari/VoiceOver	When users navigate between tabs "AMERICAS", "EUROPE AND MIDDLE EAST" and "ASIA-PACIFIC" using the keyboard's "Tab" key, the focus does not move to the first interactive element within the content of the selected tab. Instead, the focus continues to move to the next tab.	<div role="tablist" class="tab-navigation offices-tabs" aria-label="Regions"><button role="tab" class="selected" aria-controls="offices-0-tab-3676" id="offices-0-button-3676" aria-selected="true">AmericasAmericas</button><button role="tab" class="" aria-controls="offices-0-tab-3692" id="offices-0-button-3692" aria-selected="false">Europe and Middle EastEMEA</button><button role="tab" class="" aria-controls="offices-0-tab-3693" id="offices-0-button-3693" aria-selected="false">Asia-PacificAsia</button></div>	2.4.3 Focus Order (Level A)	blind, cognitive, mobility
Home	https://wearediagram.com/	Win/Chrome/NVDA	When using the keyboard to navigate through the tab controls "AMERICAS", "EUROPE AND MIDDLE EAST" and "ASIA-PACIFIC" users are unable to switch between tabs using the left/right (or up/down) arrow keys.	<div role="tablist" class="tab-navigation offices-tabs" aria-label="Regions"><button role="tab" class="selected" aria-controls="offices-0-tab-3676" id="offices-0-button-3676" aria-selected="true">AmericasAmericas</button><button role="tab" class="" aria-controls="offices-0-tab-3692" id="offices-0-button-3692" aria-selected="false">Europe and Middle EastEMEA</button><button role="tab" class="" aria-controls="offices-0-tab-3693" id="offices-0-button-3693" aria-selected="false">Asia-PacificAsia</button></div>	4.1.2 Name, Role, Value (Level A)	blind, cognitive, mobility

- 01. Skim
- 02. Sort
- 03. Strategize
- 04. Prioritize

CATEGORIES

Components (Global)

Used on most pages

Components (Reusable)

May be many instances

Content

Entered by content admins

Libraries or Integration

More challenging to adapt

IMPACT

Severity

Level A, AA, AAA

Blocker - Grey Zone

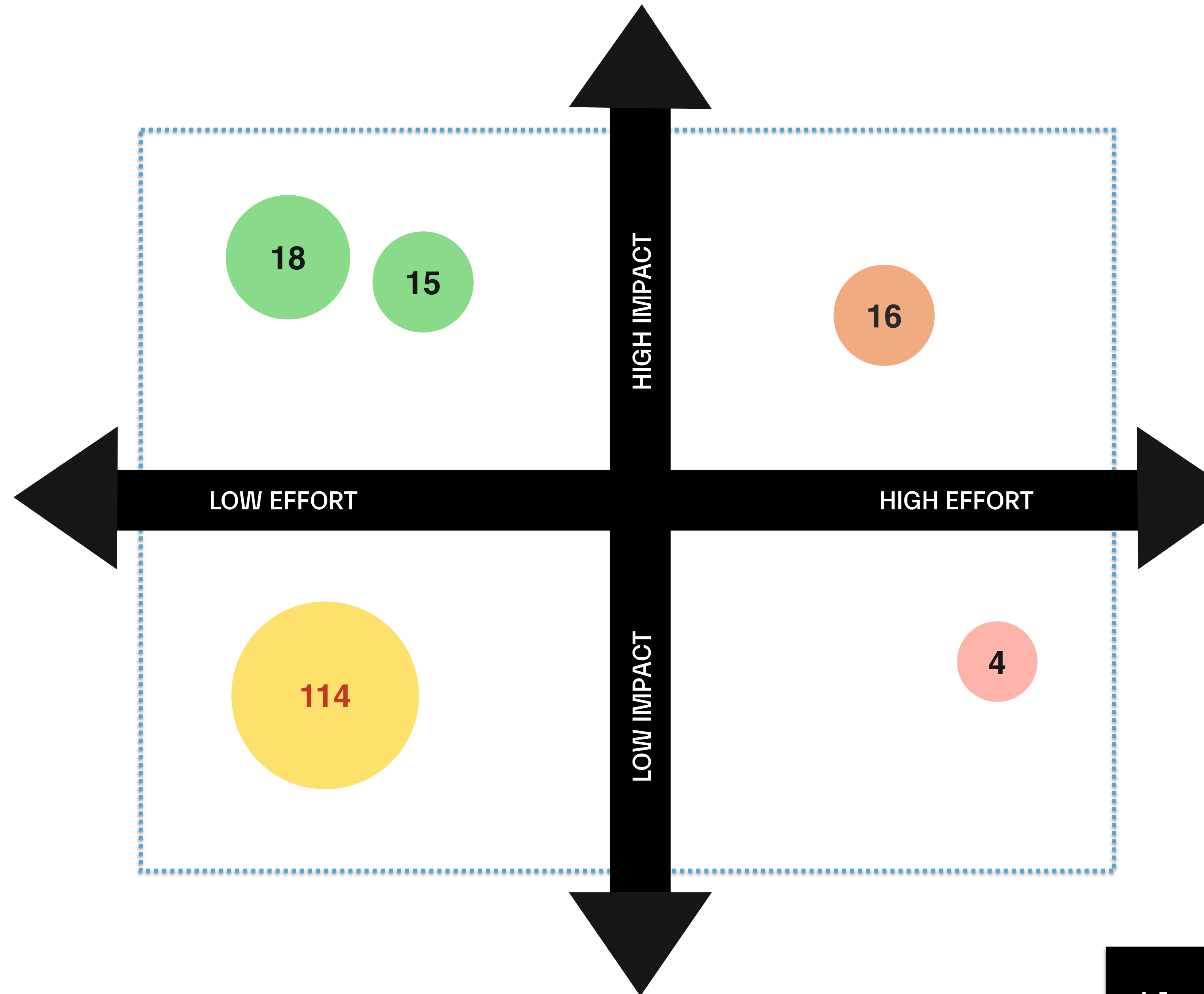
Debatable, subjective

01. Skim

02. Sort

03. Strategize

04. Prioritize



PLAYBOOK: TACTICS

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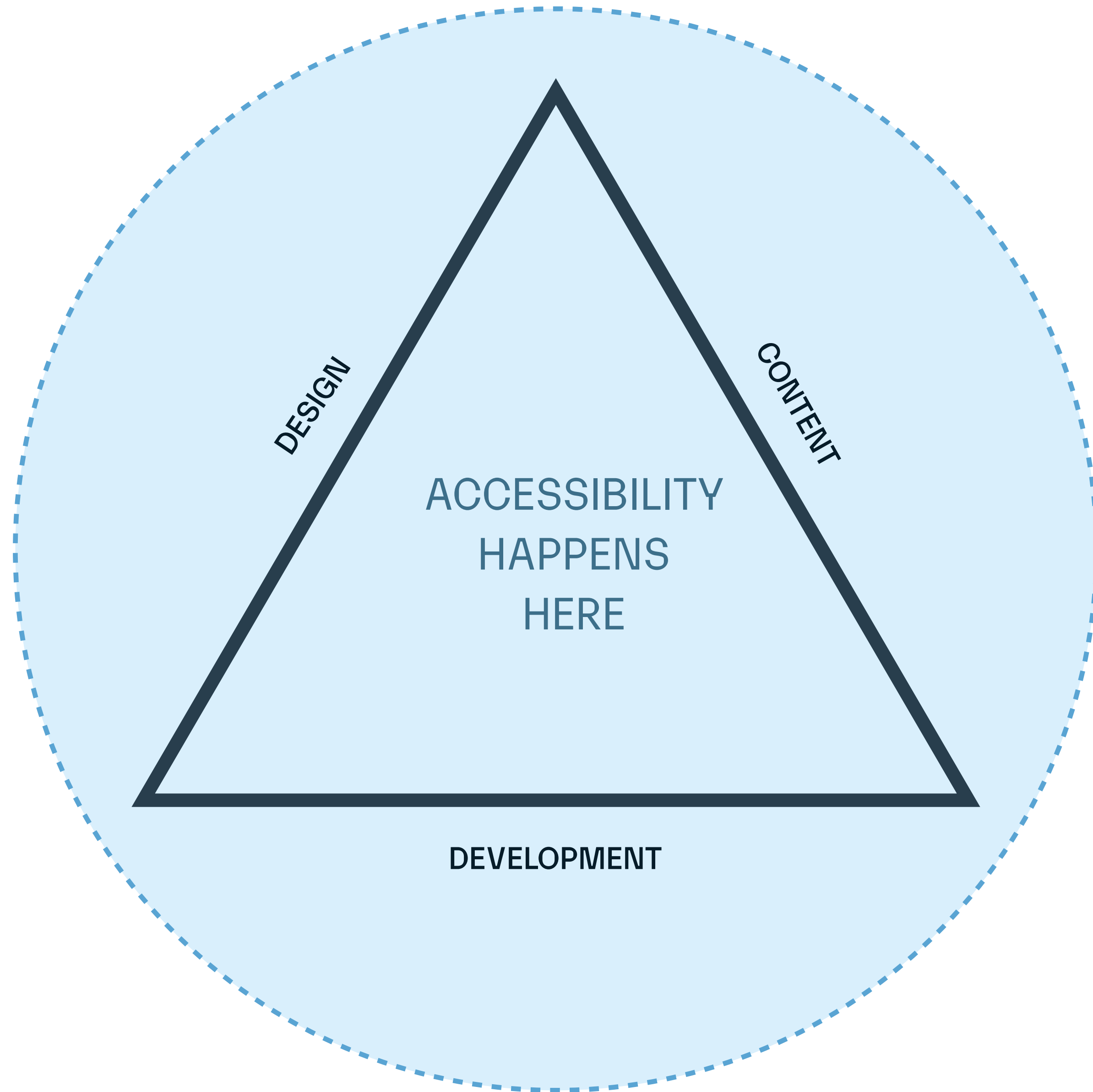
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Getting Started

- W3C Introduction to Web Accessibility
- Stories of Web Users: How People with Disabilities use the Web



Ade, reporter with limited use of his arms



Ian, data entry clerk with autism



Lakshmi, senior accountant who is blind



Lexie, online shopper (color blindness)



Sophie, basketball fan with Down syndrome



Dhruv, older adult student who is deaf



Stefan, student with ADHD and dyslexia



Elias, low vision, hand tremor, and short-term memory loss



Accessible Color

- Color-contrast checkers and plugins
- Palette-generators
- Colorblind simulators



Let's get color blind



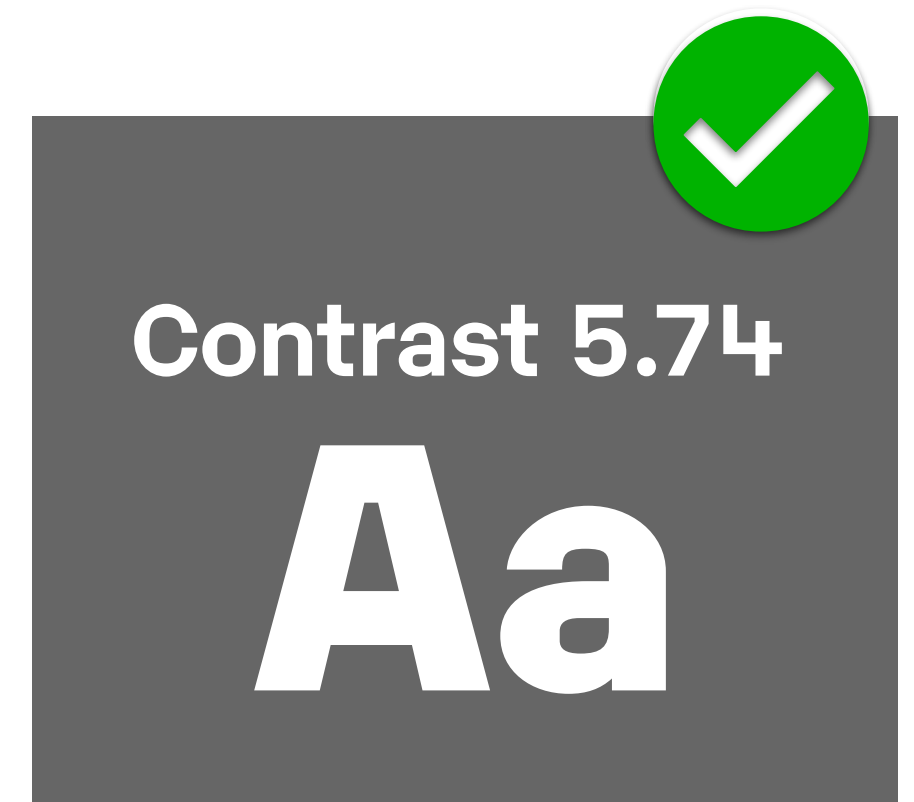
NORMAL VISION



PROTANOPIA

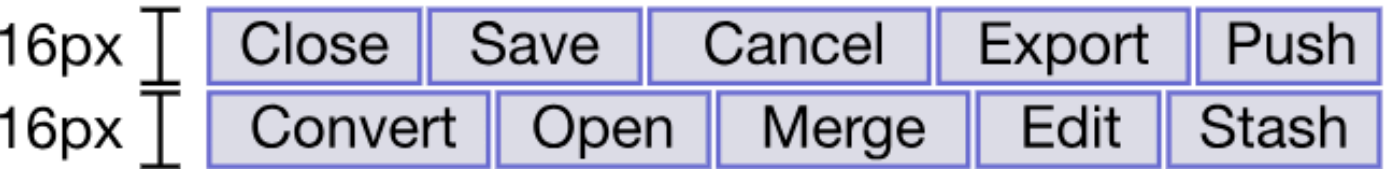


TRITANOPES

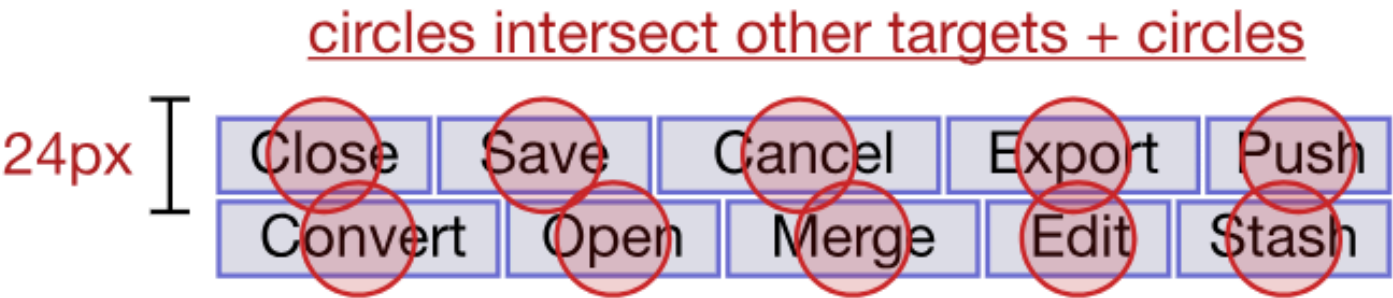


Design for Modes of Input

- Tap target requirements
- Ergonomic considerations



FAIL



Accessible Coding Guidelines

- HTML Heading Structure
- ARIA Authoring practices
- Common UI Patterns
- Inclusive UI Patterns



```
<p>First Name</p>  
<input type="text" name="firstname" />
```

Fail

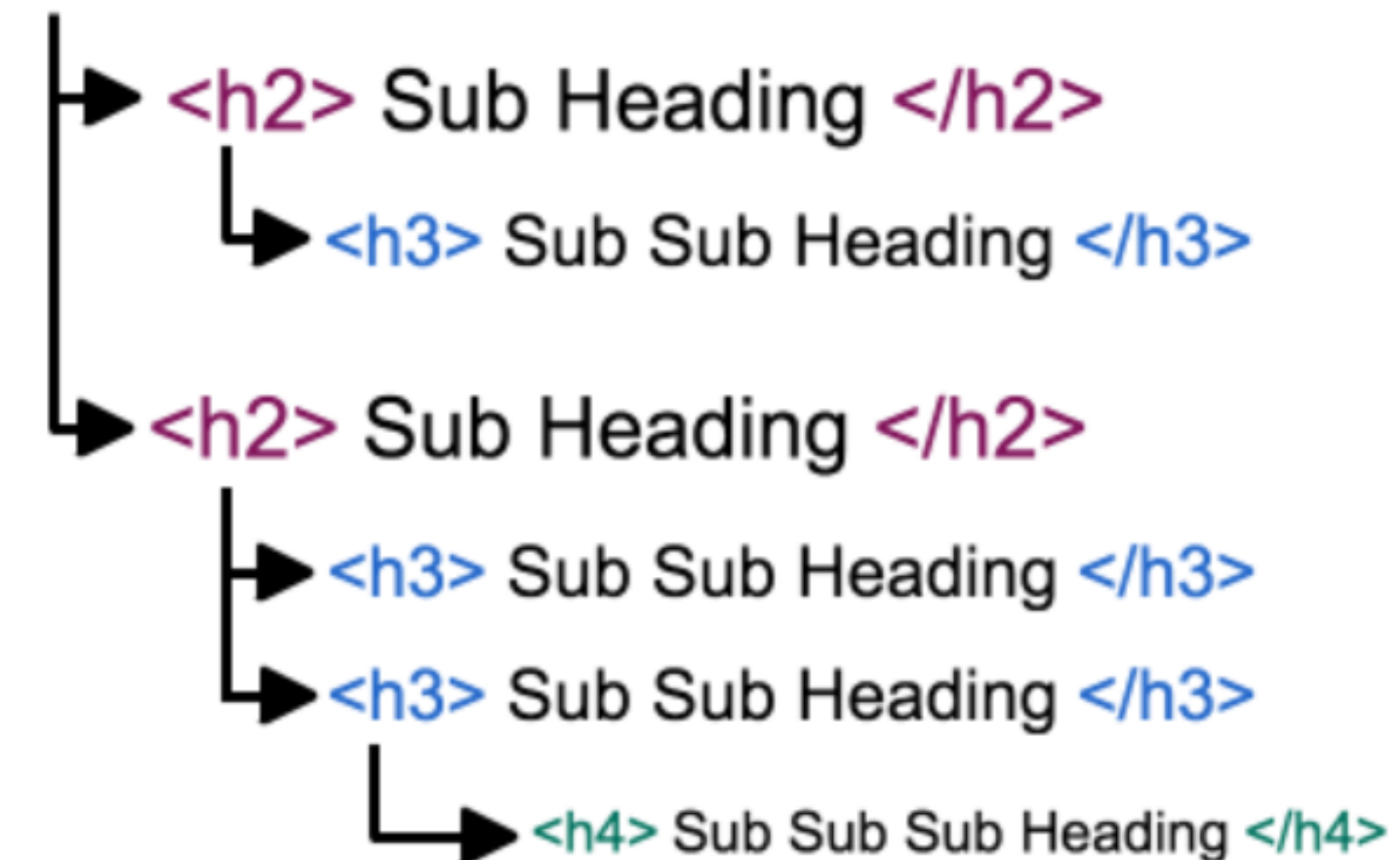
```
<label>First Name</label>  
<input type="text" name="firstname" />
```

Fail

```
<label for="firstname">First Name</label>  
<input type="text" name="firstname" id="firstname" />
```

Pass

<h1> Main Heading </h1>



For people who use screenreaders,
the code is the UX.

Using Alt Text Properly

- Understand the distinction between content images and decorative images
- Use the Alt Text Decision Tree

Example



Code

```

```

Example



Crocus bulbs

Code

```
<a href="crocusp.html">  
    
  <strong> Crocus bulbs</strong>  
</a>
```

Examples from: <https://www.w3.org/WAI/tutorials/images/decorative/>



Inclusive Writing

Guidelines and tips for accessible writing.

- Provide informative, unique page titles
- Use headings to convey meaning and structure
- Make link text meaningful
- Write meaningful text alternatives for images
- Create transcripts and captions for multimedia
- Provide clear instructions
- Keep content clear and concise

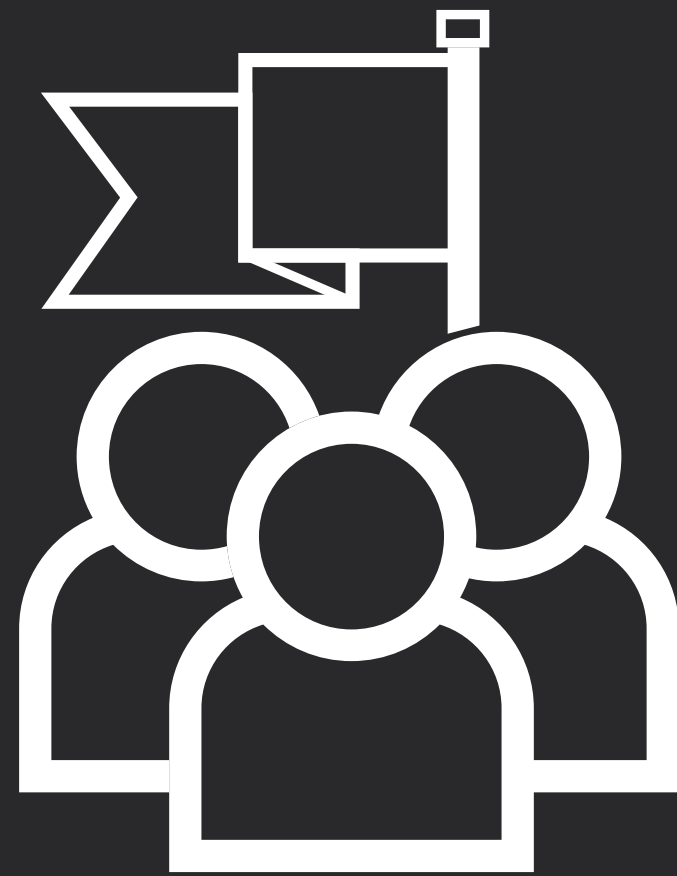


Manual Testing

- MagentaA11y: Comprehensive guide that explains how to test different components and what to test for.
- HTML Code Sniffer Bookmarklet
- WAVE Evaluation Tool
- NVDA Screen Reader (Windows)
- VoiceOver Screen Reader (Mac & iOS)



PLAYBOOK: LOOKING AHEAD



Leveling Up

- 01. Study the guidelines + examples
- 02. Listen to the stories
- 03. Recognize exclusion, advocate for inclusion
- 04. Participate

Learn to Handle Objections

COMMON OBJECTIONS

- Cost
- Design/brand constraints
- Underestimating the benefits
- Perception of demand
- Focus on short-term gains
- Cultural

01. Bake it in

02. Don't sell on principle

03. Speak their language

04. Chip Away



Design, content,
and code are your
sledgehammers.

Go forth. Knock down barriers.

#H5YR

THE GANG OF 19

July 5, 1978

Photo: John Sunderland, Denver Post File

THANKS!

Go forth, do
good design.

#H5YR

