Digital Leadership and Innovation through Inclusive Design

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Tuesday, August 18th, 2020

- What is digital accessibility?
- Who and how
- Be a leader
- What's your superpower?
- Design for everyone

Speaker Details

- Senior Inclusive Design Consultant & Digital Accessibility Strategist on WCAG / AODA Standards & Policy

- Certified Professional in Accessibility Core Competencies (CPACC), Certified Usability Tester & Analyst (CUA), Certified User Researcher (CXR)

- Member of W3C Education and Outreach (EOWG), Accessibility Roles & Responsibilities Methodology (ARRM) and WCAG Silver (AGWG) Working Groups

- Speaker at CSUN, #a11yTO, AccessU, United Nations Conference of State Parties on Persons with Disabilities (COSP)

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Siteimprove

What is Digital Accessibility?

Designing for everyone

Digital or web accessibility means that all web-based content is accessible – meaning it can be perceived, operated and understood – without barriers by people of all abilities and disabilities.

WCAG & AODA defined web content:

- Web pages on desktop and responsive mobile
- Web-based applications and software
- Text, links, images, forms, any interactive content
- PDFs and any documents that can be downloaded
- Video, audio and animated files

Inclusive design is an approach to user experience design for digital properties that takes into consideration the preferences, needs and abilities of all users as part of the original design.

IDRC

Real Life: Examples of inclusive design
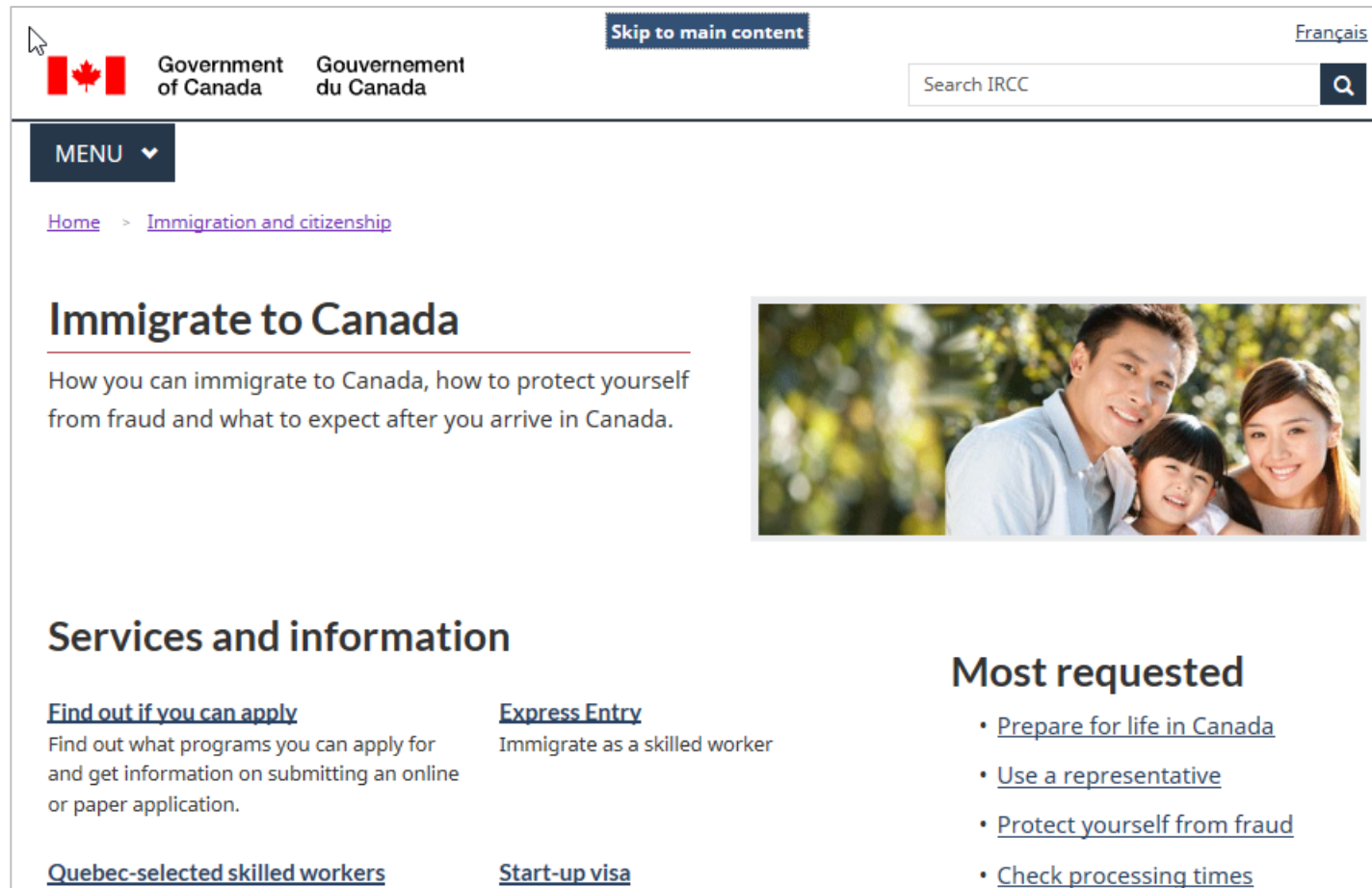
Digital: Examples of inclusive design
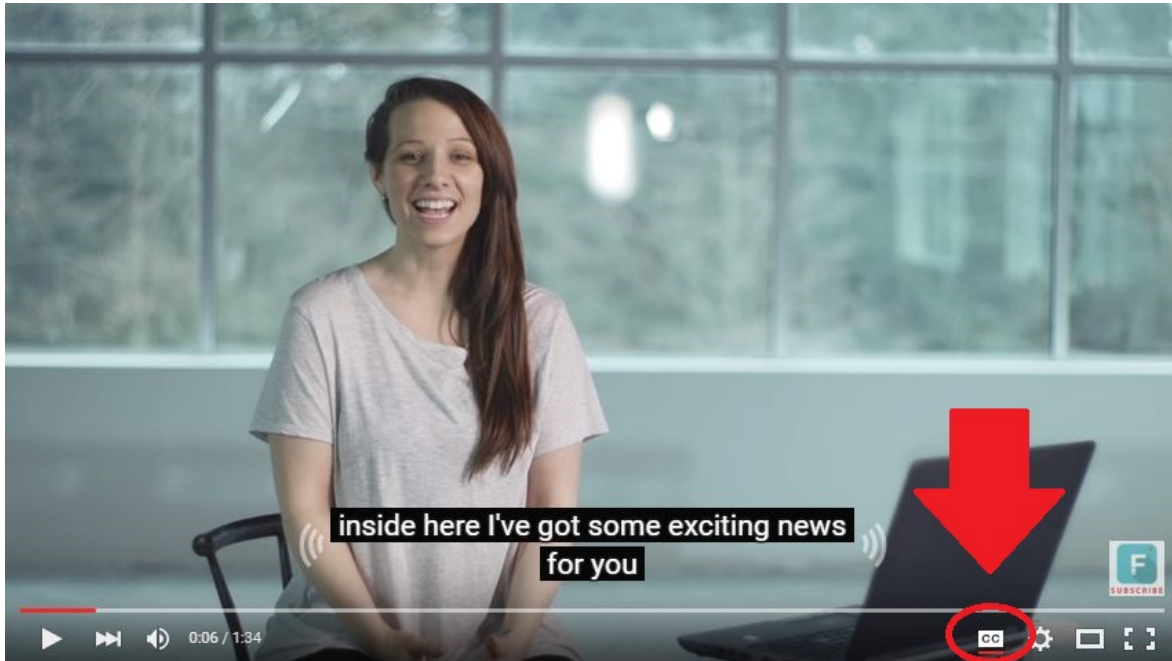
Digital: Inclusive Design for web

Be the Difference
Not disability or difficulty

The facts

Persons with disabilities use websites and mobile applications **every day**.

They have the right to do so freely **without barriers** and have equal access to information, products and services online.

If your digital media is inaccessible, you are causing the barrier. People are **disabled** by the lack of available channels, formats & options.

More facts

Many people have invisible disabilities and/or may not **self-identify** as having a disability.

The population is aging and will continue to have greater need for **simple, clear** and **effective** interactions and communications.

Cognitive disabilities and differing neuro-abilities such as dyslexia, autism, ADHD and dyspraxia are being **recognized** in people earlier.

The good news

Primarily, challenges to web accessibility stem from **attitudinal and societal** barriers. You have the power to remove these now.

Once these are removed, changes to **policy** and **process** follow easily. Accessibility compliance **becomes part of each project**.

Suddenly, constraints such as "cost" and "time" are no longer an issue when accessibility is a **business requirement**.

Become a leader.

Move from:

Individual or organization causing barriers → future innovator. A leader in technological innovation, inclusion and diversity

Fear of non-compliance; uncertainty → **positive, people-centric** designer or organization with equipped, skilled and proactive teams

Feeling overwhelmed → Allowing changes to take time. New skillsets, processes, organizational commitment. Start today and keep going.

Who and How

Know your audience

Web Content Accessibility Guidelines (WCAG) and Accessibility Laws:
The goal for inclusion

AODA: Four Principles

Dignity

Self-respect, respect of others

Independence

Do things without help from others

Integration

Same service, same way

Equal Opportunity

Same options, chances, benefits

WCAG: Four Principles

Perceivable

People & machines 'see' it

Operable

Everyone can operate it

Understandable

Make it easier for people & machines to comprehend it

Robust

Ensure it supports variety of devices

W3C

15-20% of the world's population has some form of disability.

1 in 7 Canadians has a disability.

Physical Disabilities

- Amputation
- Arthritis
- Fibromyalgia
- Reduced dexterity
- Muscular dystrophy
- Repetitive stress injury (RSI)
- Tremor and spasms
- Quadriplegia

WAI

Physical: Assistive Technologies

- Ergonomic or specially designed keyboard or mouse
- Head pointer, mouth stick, and other aids to help with typing
- On-screen keyboard with trackball, joysticks, or other pointing devices
- Switches operated by foot, shoulder, sip-and-puff, or other movements
- Voice recognition, eye tracking, and other approaches for hands-free interaction

WAI

Physical: Assistive Technologies

WAI

Physical: Assistive Technologies
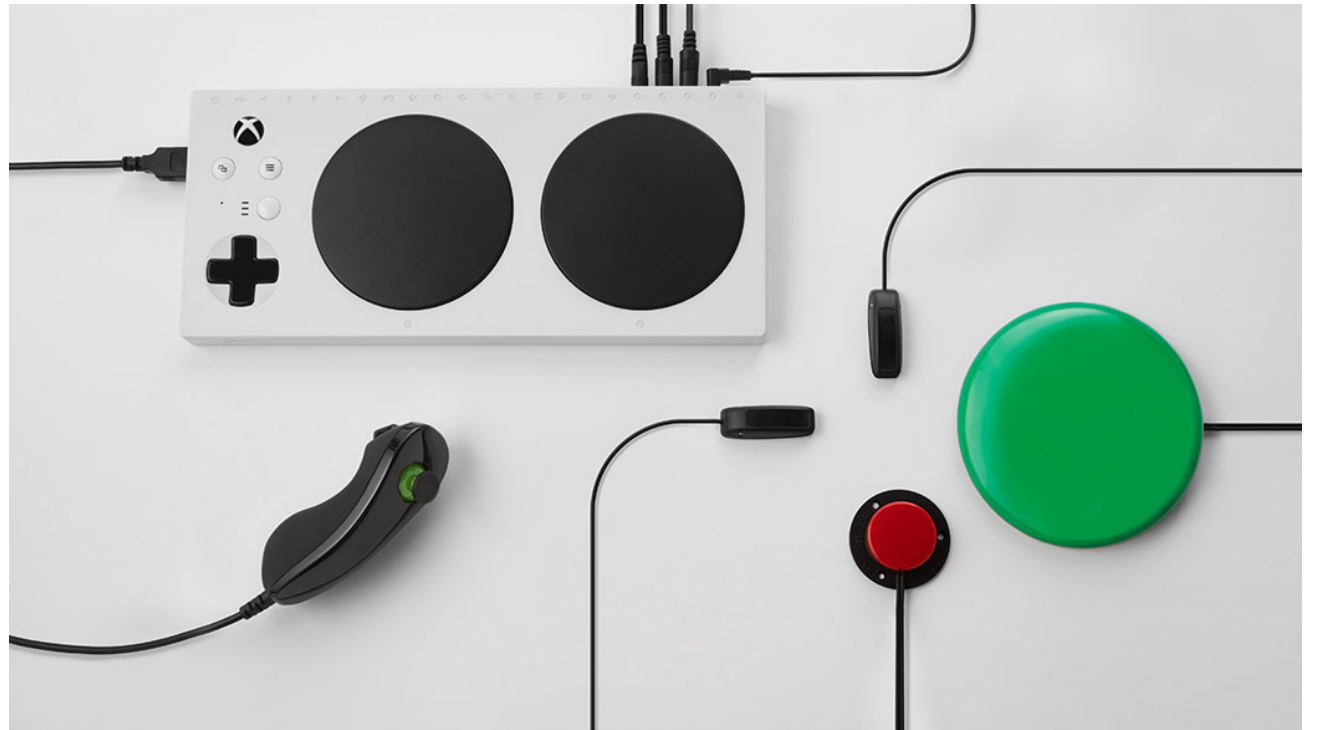
Physical: Common Barriers

- Websites, web browsers, and authoring tools without full keyboard support
- Insufficient time limits to respond or to complete tasks (online forms)
- Controls, including links with images of text, that do not have equivalent text alternatives
- Missing visual and non-visual orientation cues, page structure, and other navigational aids
- Inconsistent, unpredictable, and overly complicated navigation mechanisms and page functions

WAI

Visual Disabilities

- Color blindness
- Low vision or partial sight
- Blindness
- Deaf-blindness

WAI | Says.com

Visual: Assistive Technologies

- Screen Readers (JAWS, NVDA, Safari, Narrator)
- Zoom Magnification (
- High Contrast Tools (Customizing settings for fonts, colors, and spacing)
- Audio Descriptions for video in multimedia
- Braille translators and Braille printers
- eSight camera glasses
- Mobile apps: Be My Eyes, Aira

WAI

Visual Assistive Technologies

Visual: Assistive Technologies
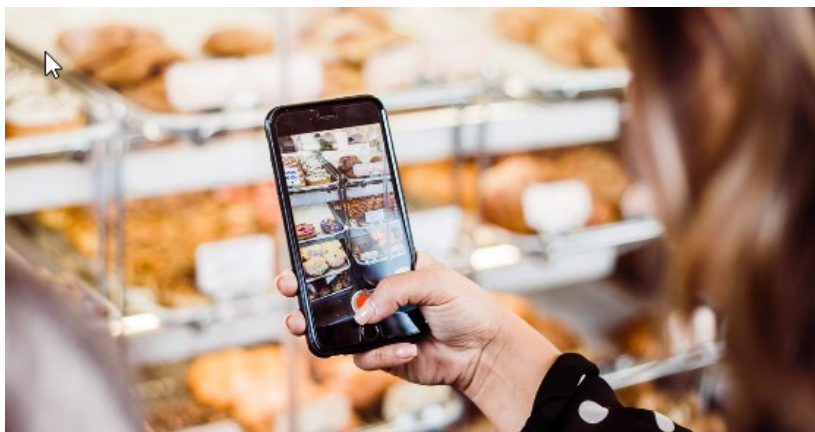
Be My Eyes

Aira.io

eSight

Visual: Screen Readers & Browsers

72.4%   **61.7%**   **47.1%**   **30.3%**

[WebAim](#)
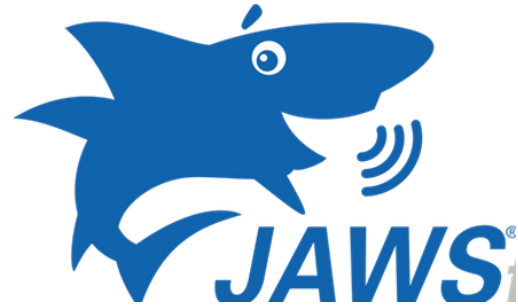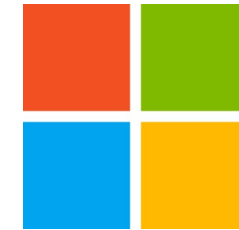
Visual: Common Barriers

- Images, controls, and other structural elements that do not have equivalent text alternatives
- Text, images, and page layouts that cannot be resized, or that lose information when resized
- Missing visual and non-visual orientation cues, page structure, and other navigational aids
- Video content that does not have text or audio alternatives, or an audio-description track
- Inconsistent, unpredictable, and overly complicated navigation
- Text and images with insufficient contrast
- Websites, web browsers that do not support the use of custom color combinations
- Websites, web browsers without full keyboard support

WAI

Christine Hà
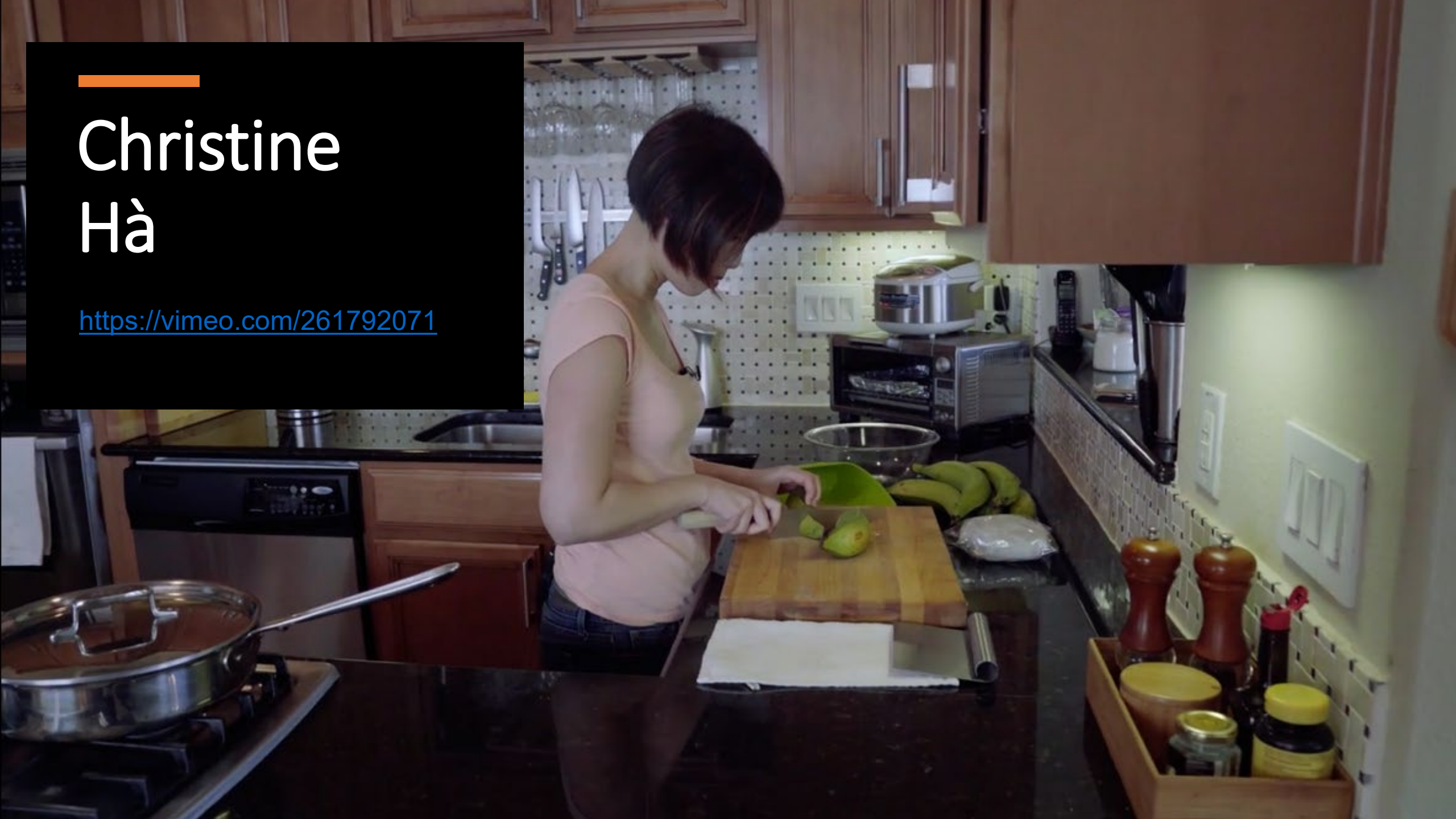
Auditory Disabilities

- Hard of hearing
- Deafness
- Deaf-blindness

WAI

Auditory: Assistive Technologies and Services

- Hearing aids
- Sign language (ASL, BSL, PSL)
- CART / Live Captioning
- Video captioning
- Video Relay Services (VRS), Telecommunications Relay (TRS)
- Inclusive communication channels: e-mail and feedback forms that do not rely on voice

WAI

Auditory: Assistive Technologies

[Seattle Times](#)

Auditory: Common Barriers

- Audio content, such as videos with voices and sounds, without captions or transcripts
- Media players that do not display captions and that do not provide volume controls
- Media players that do not provide options to adjust the text size and colors for captions
- Web-based services, including web applications, that rely on interaction using voice only
- Lack of sign language to supplement important information and text that is difficult to read

WAI

Kirsten Skov

https://vimeo.com/267235821

Cognitive Disabilities

- Autism spectrum disorder (ASD)
- ADHD
- Anxiety, delirium, depression, paranoia, schizophrenia
- Memory impairments
- Multiple sclerosis
- Diversity in neurocognitive functioning
- Learning difficulties (Dyslexia, Dysgraphia, Dyscalculia)
- Seizure disorders

WAI

Cognitive: Best Practices and Assistive Technologies

- Text-to-Speech software (Apple Siri, Android TalkBack)
- MagnusCards, DyslexieFont.com
- Web Design
  - Clearly structured content that facilitates overview and orientation
  - Consistent labeling of forms, buttons, and other content parts
  - Predictable link targets, functionality, and overall interaction
  - Different ways of navigating websites
  - Options to suppress blinking, flickering, flashing, distracting content
  - Simpler text supplemented by images, graphs, and other illustrations

Cognitive: Assistive Technologies

MagnusCards

The letters of the Dyslexie font are designed by taking the experience of dyslexia into consideration.

The most con dyslexia are mirroring, cha melting lette Dyslexie font individually s common read

DyslexieFont.com

Cognitive: Common Barriers

- Complex navigation mechanisms and page layouts that are difficult to understand and use
- Complex sentences that are difficult to read and unusual words that are difficult to understand
- Long passages of text without images, graphs, or other illustrations to highlight the context
- Moving, blinking, or flickering content, and background audio that cannot be turned off
- Web browsers and media players that do not provide mechanisms to suppress animations and audio
- Visual page designs that cannot be adapted using web browser controls or custom style sheets

WAI

Dillan

https://www.youtube.com/
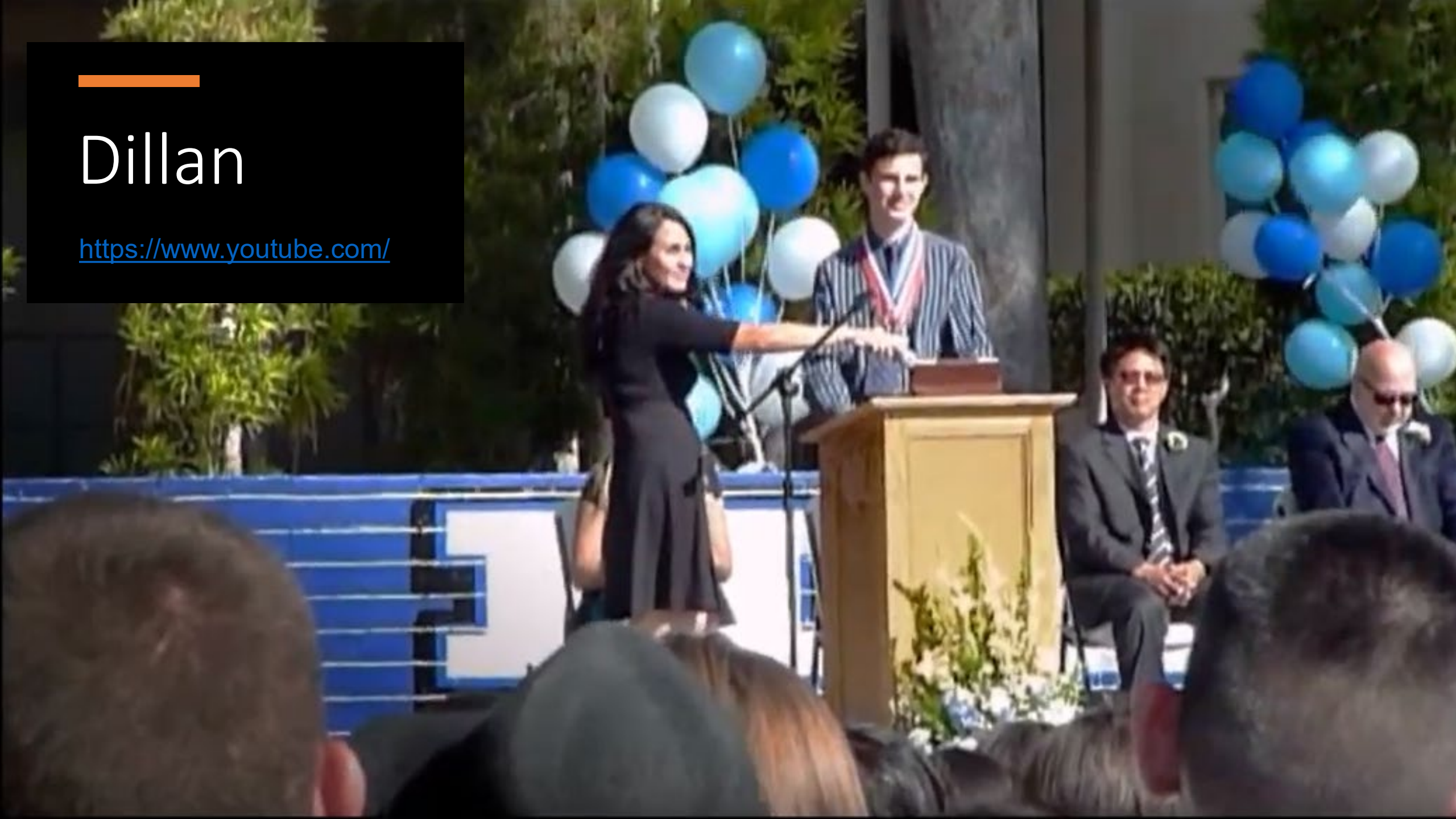
Speech Disabilities

- Apraxia of speech (AOS)
- Dysarthria
- Speech sound disorder
- Stuttering
- Muteness

Speech disabilities include difficulty producing speech that is recognizable by others or by voice recognition software. For example, the loudness or clarity of someone's voice might be difficult to understand.

WAI

Speech: Assistive Technologies and Best Practices

- SMS / Texting applications
- Text-to-Speech software
- Symbol-based communications (paper or digital)

Speech: Stuttering is Cool
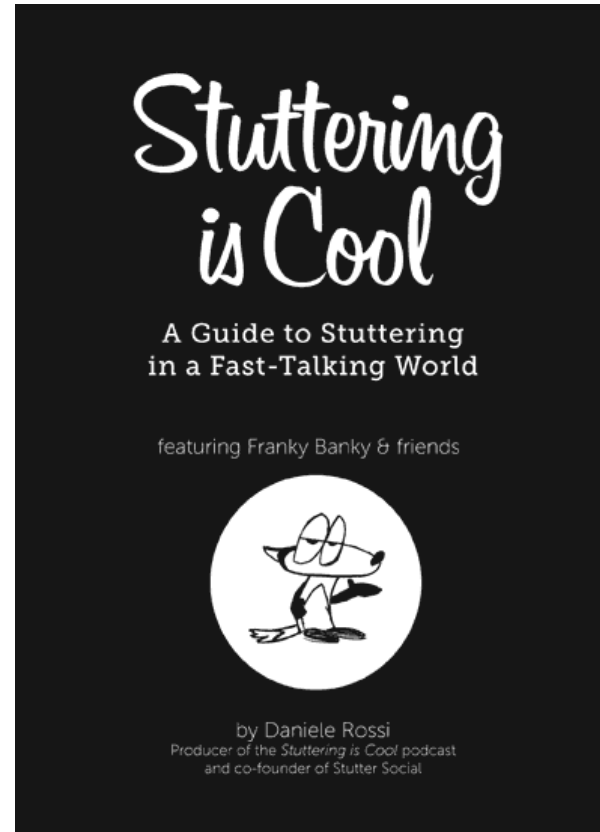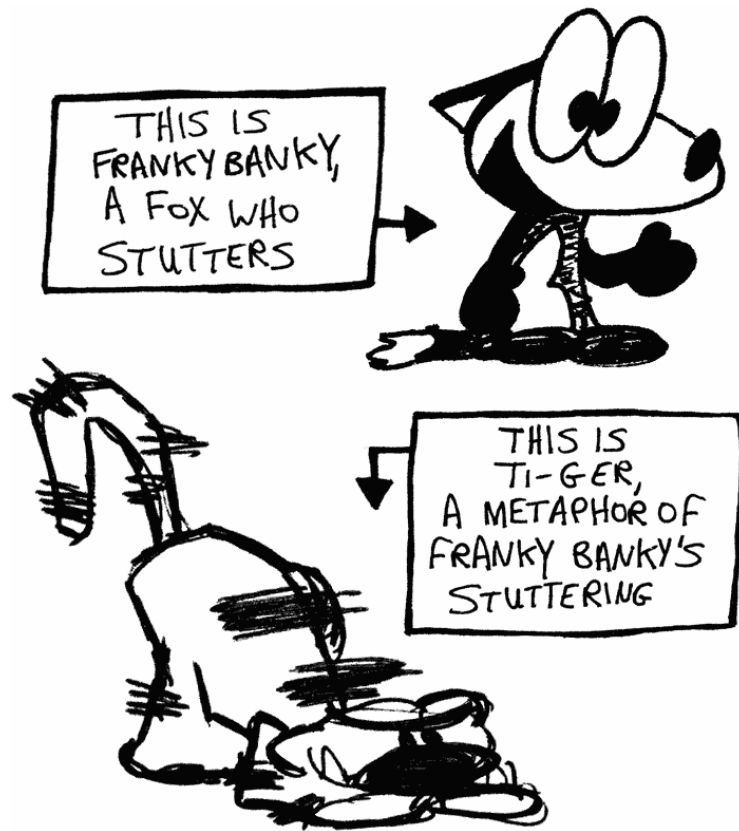
Dan Rossi is a digital marketing and accessibility specialist and artist who writes comics about his experiences with stuttering.

www.stutteringiscool.com

Speech: Common Barriers

- Web-based services, including web applications, that rely on interaction using voice only
- Websites that offer phone numbers as the only way to communicate with the organizations

WAI

Speech AT

https://youtu.be/vXBzAGtsG-w

UX and Graphic Designers: You have the power

Inclusion starts with your design

You have the power to change lives!

- Accessibility is simply someone's user experience. It is your job to deliver it.
- It feels good to know that you're doing all you can to consider people's needs.
- Think not just of one user, but all five disability types – visual, auditory, physical, cognitive, speech.
- Use the "Stop, start, continue" exercise to get started
- Whenever possible, involve real users & their feedback

Which of the following do you think is the primary reason that many developers do not create accessible web sites?

Response	# of Respondents	% of Respondents
Lack of awareness of web accessibility	461	38.0%
Lack of web accessibility skills or knowledge	414	34.1%
Fear that accessibility will hinder the look, feel, or functionality	224	18.5%
Lack of budget or resources to make it accessible	115	9.5%

Respondents this year were more likely to indicate lack of web accessibility skills or knowledge (34.1% compared to 26.6% in 2015) as the primary reason for inaccessibility than on previous surveys.

WebAIM

The Role of UX in Accessibility
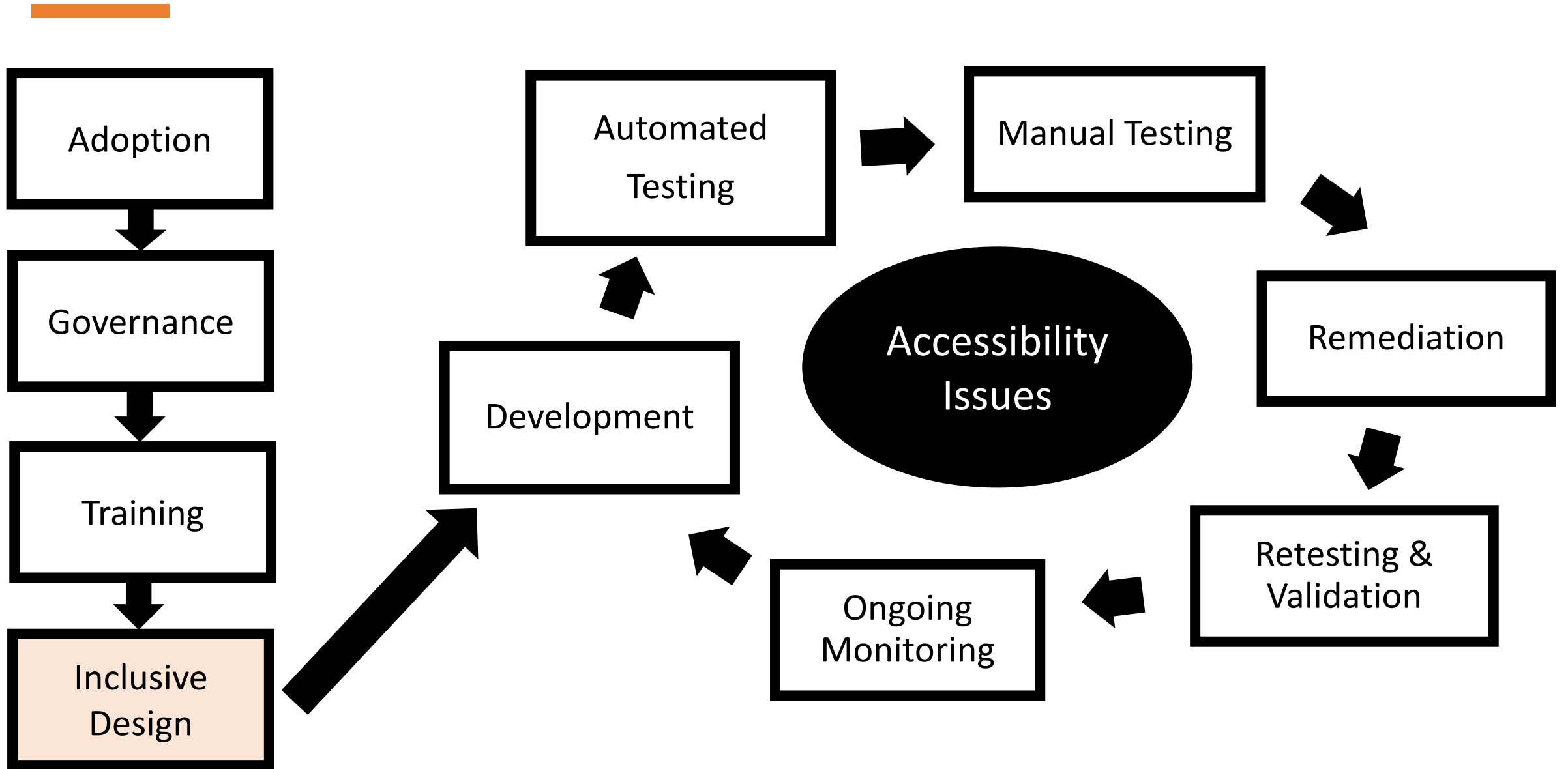
Roles and Responsibilities

Adoption	Governance	Training	Inclusive Design	Development	Automated Testing	Manual Testing	Remediation	Retest & Validate	Ongoing Monitoring

Executive Management

Designer

Development

Content Writer

Quality Assurance

Quality Assurance

Marketing

Testing Tools
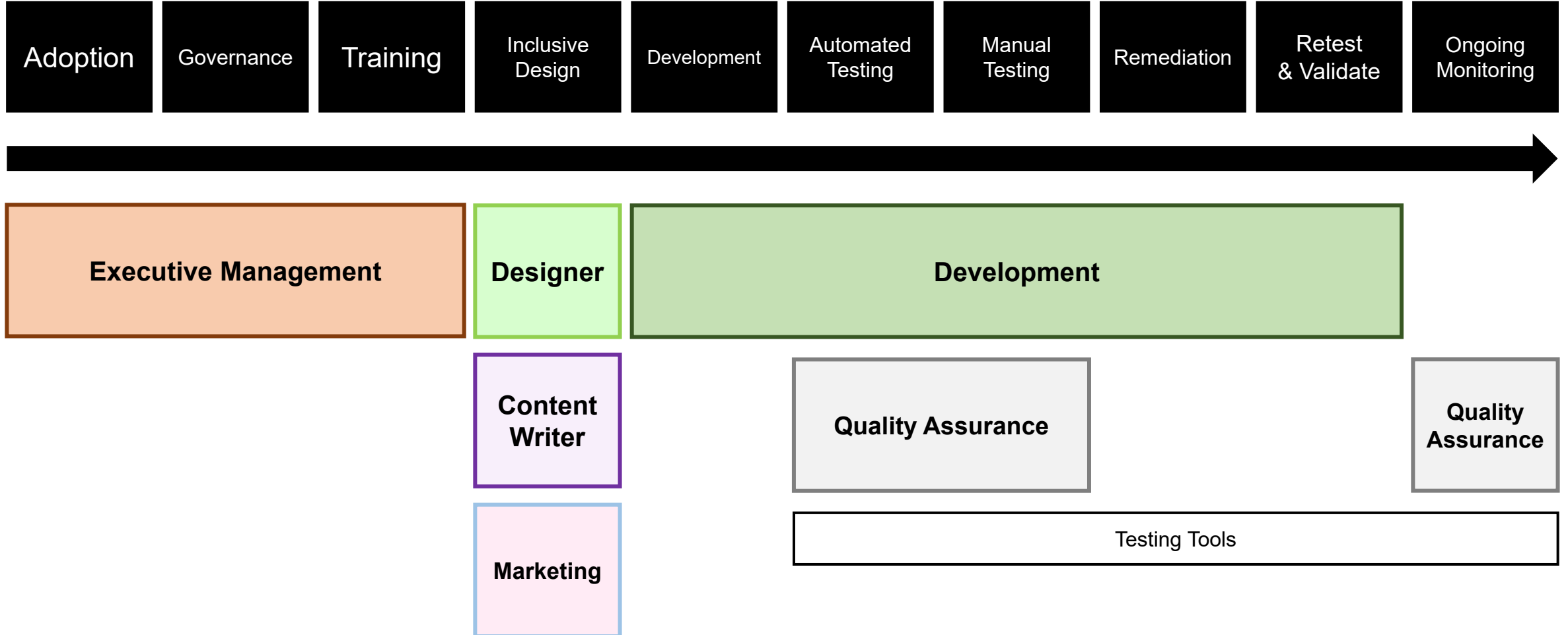
Design for everyone

Develop your strategy for inclusive design

Things you will need:

- ❑ An overall design vision → templates
- ❑ Understanding of how Assistive Tech users navigate websites
- ❑ User stories and/or personas that include disabilities
- ❑ Business Requirements Documents (BRD)
- ❑ User interface documents (UID)
- ❑ Accessibility Test Plans
- ❑ Pattern Library
- ❑ Style Guide

1. Familiarize yourself with user needs: Accessibility is usability

Physical   Visual   Auditory   Cognitive   Speech

2. Review Your Current Designs

Is your content and design creating a **barrier**?

Is the format **inclusive** of the preferences and needs of the widest range of users?

Complete the **Stop, Start, Continue** exercise

3a. Add to your Pattern Libraries

- **Foundation Libraries:** Grid / Layout, Typography, Iconography

- **Use consistent templates and components**

- **Page Elements:** Header, Footer, Menus, Images, Sliders, Filters, Ratings, Search, Carousels, Accordions, Tabs, Filters, Buttons, Chat, Registration forms, Videos, Text Transcripts
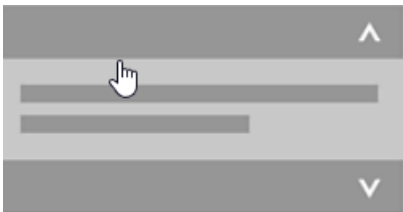
3b. Create personas & user stories

- Create **personas** based on needs and preferences and display them prominently on the wall or share within a Design System. Share.

- Create **user stories** that incorporate accessibility needs for your key user experience flows. "As a blind user, I..."

  - Searching for a product

  - Shopping for a product, filter details, add to cart, purchase

  - Complete a registration form

  - Chat with an agent

4. Build your toolkit of resources

The W3C **Web Accessibility Initiative (WAI)** develops standards and support materials to help you understand and implement accessibility.

WAI Web Accessibility Perspectives: Videos
WAI Diverse Abilities and Barriers
WAI Design and Develop Overview

Inclusive Design Guide from the IRDC

BBC GEL Design Patterns
Article: Sympathy vs Empathy in UX by Sarah Gibbons

5a. Document the requirements (Process)

Business Requirement Document (BRD)	→	User Interface Document (UID)	→	QA Accessibility Test Plan
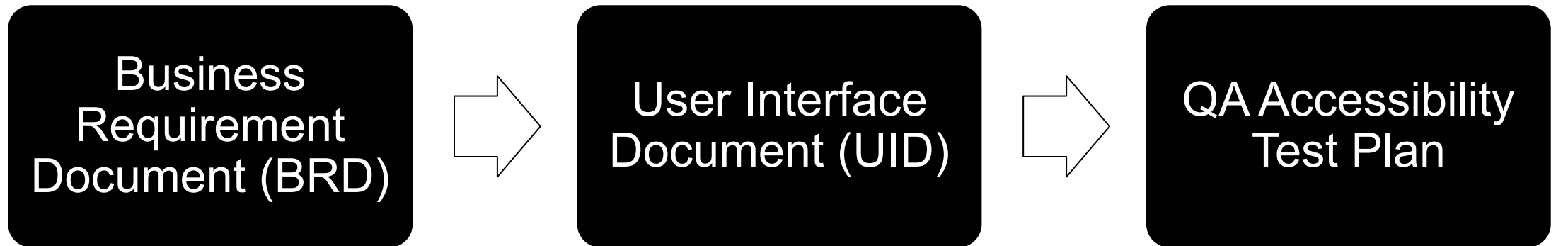
Create **a mandated policy or standard** and ensure the business requirements for every project (and vendor deliverables) includes conformance (e.g. WCAG 2.1 Level AA).

Outline the **accessibility interactions** with screen readers, keyboard, tabbing order, expected functionality. (+ PDF, Video and images).

Specifics = no guessing.

Ensure the business requirements are **tested and measured** against WCAG, according to the interactions outlined in your document.

5b: Document the requirements (Teams)

Interaction Design documents (UID)

Pattern Library

Accessibility Test Plan

Brand & Style Guide

Marketing Materials (blogs, video, PDF)

User Stories

Team Exercises

Stop, Start, Continue
Accessibility Roles & Responsibilities Methodology (ARRM)

Outcomes: Clarity, ownership & empowerment

Team Exercise 1: Stop, Start, Continue

Stop. What **content formats** or **processes** are creating a barrier? What activities must stop in order to meet your compliance goals (WCAG Level AA)?

Start. What **activities** can you start today to reach your goals?

Hint: It has to come from the top. Ensure compliance is a mandated business requirement and non-negotiable.

Continue. What activities are working towards your goal for compliance and inclusion? How can you start to **implement** them across your organization?

Team Exercise 2: ARRM

Assemble those responsible:

- Project management
- CMS management
- Content (all types)
- <mark>User interface design</mark>
- Visual design & branding
- Front-end development
- QA testing
- Agile Sprint Planning

Identify accessibility checkpoints, aka tasks

Sources can be:

- Audit reports (reporting tools)
- JIRA tickets/ outstanding issues
- Project plan
- Business requirements document (BRD)
- User Interface Design document (UID)
- Design systems / component libraries
- Style guide
- Usability studies / User feedback sessions
- ARRM Checkpoint Master List

Use the ARRM Role-Based Decision Tree

For each checkpoint, ask:

1. Is this checkpoint driven by <u>Business</u> or non-func requirements?
2. Is this checkpoint about <u>Visual Design</u>?
3. Is this checkpoint about <u>Content Authoring</u>?
4. Is this checkpoint about <u>UX Design</u>?
5. Is this checkpoint about <u>Implementation</u>?
6. Is this checkpoint about <u>Testing</u>?
7. IF NONE OF THE ABOVE, then it becomes a <u>Management</u> concern.

Consult the Checkpoint Master List (Tasks)

Images and Graphs

ID	WCAG SC	Conformance Level	Checkpoint	Main Role	Role Ownership		
					Primary	Secondary	Contributor(s)
IMG-001	1.1.1	A	Informative alternate text is provided for images (i.e. not "spacer" or image file name).	Design	Content Authoring	UX Design	none
IMG-002	1.1.1	A	Informative images are described with a clear and meaningful text equivalent (alt attribute or other equivalent means).	Design	Content Authoring	Visual Design	UX Design
IMG-003	1.1.1	A	Purely decorative images are provided with null alt attribute values (or other equivalent means).	Implementation	Front End Development	none	none
IMG-004	1.1.1	A	Null alt attribute values are used for images that are already described in text in adjacent page content.	Implementation	Front End Development	UX Design	Content Authoring Visual Design
IMG-005	1.1.1	A	Adjacent linked images and text links pointing the same URL are combined into single links.	Implementation	Front End Development	UX Design	none
IMG-006	1.1.1	A	Alt text used for images of text include all relevant text found in the image.	Design	Content Authoring	UX Design Visual Design	none
IMG-007	1.1.1	A	Informative images are marked up as foreground images, and not embedded as part of the CSS.	Implementation	Front End Development	none	none
IMG-008	1.1.1	A	The purpose or function of complex images is accurately described in text.	Design	Content Authoring	UX Design	none
IMG-009	1.1.1	A	The purpose or function of complex images is conveyed using a descriptive alt attribute value (or other equivalent means).	Implementation	Front End Development	none	none
IMG-010	1.1.1	A	The full explanation of complex images is accurately described in text.	Design	Content Authoring	none	none
IMG-011	1.1.1	A	A mechanism that conveys the way through which the full explanation of complex images is defined.	Design	UX Design	none	none
IMG-012	1.1.1	A	The full explanation of complex images is provided through the longdesc attribute (or other equivalent means).	Implementation	Front End Development	none	none
IMG-013	1.1.1	A	Images primarily conveying function use alternative text to describe their purpose, rather than what they look like.	Design	Content Authoring	UX Design	none
IMG-014	1.1.1	A	Text alternatives of static and linked images do not replicate any information that is already being conveyed by screen reader technology.	Design	Content Authoring	Front End Development	none
IMG-015	1.1.1	A	Text alternatives of dynamically updated images are simultaneously updated as the images change.	Implementation	Front End Development	UX Design	Content Authoring
IMG-016	1.1.1	A	Alternate means of accessing CAPTCHA information are provided, such as audio CAPTCHA, logical question, or other equivalent means.	Design	Visual Design	UX Design	Business Analyst
IMG-017	1.1.1	A	Images which do not convey information are defined as decorative.	Design	Content Authoring	Visual Design UX Design	none
IMG-018	1.1.1	A	Charts, graphs, infographics and other visual representations of information don't rely on color alone to convey information.	Design	Visual Design	UX Designer	none
IMG-019	1.4.5	AA	Text content that conveys information is not part of images.	Design	Visual Design	Content Authoring	Front End Development
IMG-020	1.4.5	AA	Text that is visually made to be part of an image is handled through HTML and CSS instead.	Implementation	Front End Development	Visual Design	Content Authoring

Use the UX Checkpoint Master List

- [UX Designer Responsibilities Mapping](#)

- [Visual Designer Responsibilities Mapping](#)
- [Content Author Responsibilities Mapping](#)
- [Front-End Developer Responsibilities Mapping](#)

Questions? Thank you!

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