

# Designing for Accessibility

Our Framework and Best Practices

mobileLIVE



# UNDERSTANDING ACCESSIBILITY

## Digital technology has reshaped our world.

It has created fantastic opportunities and changed our everyday lives. We all want to benefit from technology, but we all interact with it differently.

Digital accessibility refers to the practice of building digital content and applications that can be used by a wide range of people, including individuals who have visual, motor, auditory, speech, or cognitive disabilities.

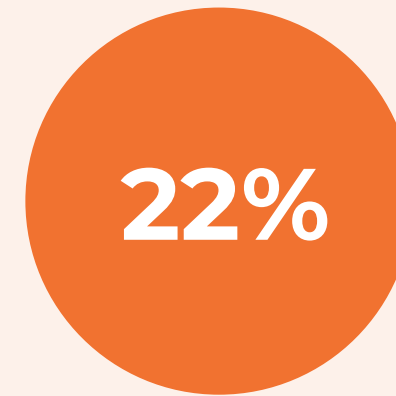
## DON'T LIMIT YOUR MARKET

**54% of adults with a disability go online**


World Bank estimates that there are 1 billion people with disabilities on the planet, which is 15% of the world population. That is a considerable amount of people that could be potentially locked out of your site or application.

Seniors are a continually growing population. In 2036, they will represent 23 to 25 percent of the total population, and we need to consider all the limitations that come with age.

In addition, not all disabilities are permanent. For example, an injured arm is a temporary disability, and holding a baby in one arm is a situational disability. **By ignoring accessibility, you significantly limit your market.**



of Canadians had at least one disability

 6.2 million

## ACCESSIBILITY IS GOOD FOR BUSINESS

Studies show that accessible websites have better search results, reach a bigger audience, have faster download times, encourage better coding practices, and always have better usability.

**30%**

consider accessibility when deciding which business to visit

**2/3**

are concerned about future mobility challenges

# LEGAL ASPECTS

Accessibility is also a **regulatory requirement**. Many countries are now introducing new regulations and tightening existing accessibility laws.

## Lawsuits targeting business websites over ADA violations are on the rise.

### CANADA 🇨🇦

Private or non-profit organizations with more than 50 employees, and all public sector organizations must meet Level AA by January 2021.

### USA 🇺🇸

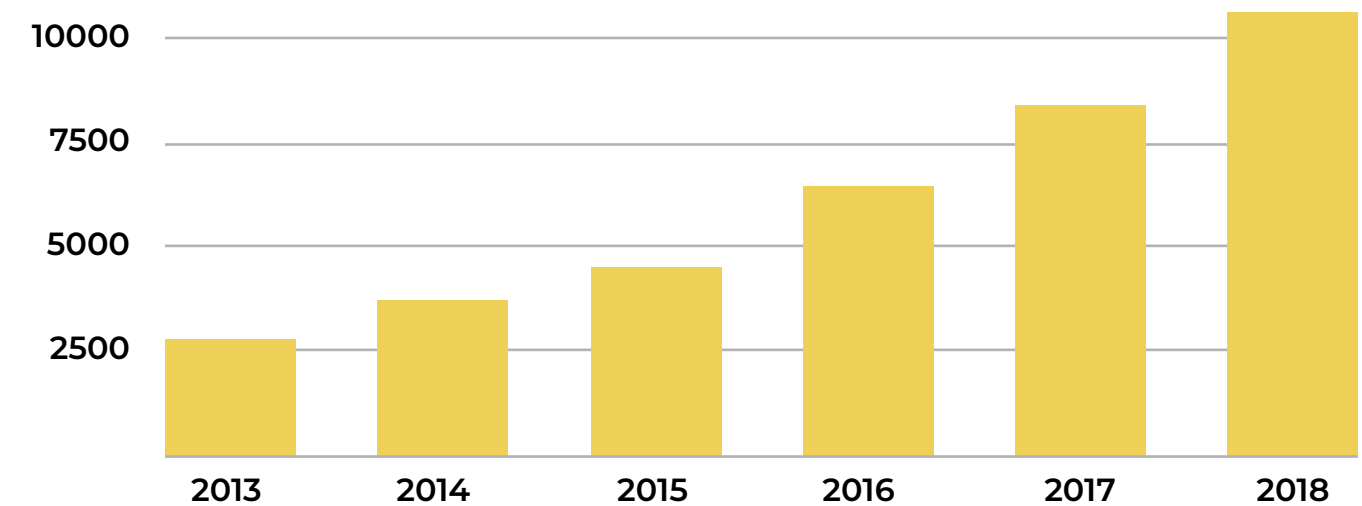
Federal, state, and local government websites are obligated to comply with AA level accessibility standards.

### EUROPE 🇪🇺

Will enforce accessibility obligations for new websites from 2019 onward, for pre-existing websites from 2020, and for all public sector apps from 2021.

Even if the regulations are not all set yet - the lawsuits are coming. Companies that continue building products without consideration for accessibility will later find themselves in the difficult position of needing to update their products for compliance in a difficult regulatory environment.

## ADA VIOLATION LAWSUITS 2013 - 2018







**56,000 organizations** in Canada were required to file accessibility compliance reports.

## Accessibility 2024

The government is taking steps towards its goal of “making B.C. the most progressive province in Canada for people with disabilities by 2024 – including a fully accessible Internet.”

# ACCESSIBILITY STANDARDS

## TYPES OF DISABILITY

 <b>Visual</b>	 <b>Motor</b>	 <b>Hearing</b>	 <b>Cognitive</b>
Color blindness Low vision Blindness	Difficulty or inability to use hands Tremors Limited fine motor control Slow response time	Deafness Hard of hearing	Memory Attention Developmental issues

**Assistive technology helps increase, maintain, or improve the functional capabilities of individuals with disabilities, through devices like screen readers, magnification tools, and hearing aids.**

**Accessible design always takes into account the use cases of various assistive technologies.**

## PRINCIPLES OF ACCESSIBILITY

**Perceivable:** Information and user interface components must be presented to users in ways they can perceive. Information can't be invisible in certain user scenarios.

**Operable:** Users must be able to operate the interface. It cannot require interactions that the users cannot perform.

**Understandable:** All the content should be clear and consistent, and should allow users to discover it at their own pace.

**Robust:** Content should be flexible and adaptable to a variety of mediums and input methods, including assistive technology.

## WEB CONTENT ACCESSIBILITY GUIDELINES

The Web Content Accessibility Guidelines (WCAG) published by W3C are a set of rules defining the accessibility of a website: mandatory for the public sector and adopted by the private sector as well. As a result, digital creators around the world rely on these rules. For each guideline, there are testable success criteria at three levels, for **A, AA, and AAA standards.**

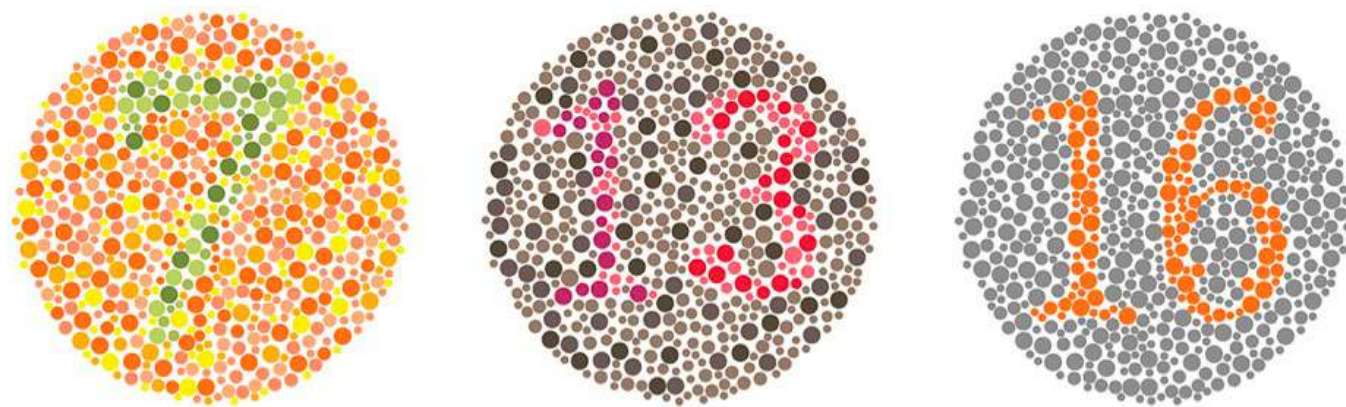
# ACCESSIBILITY CHECKLIST

Here are some simple steps you can take to make your websites and mobile applications more accessible.

## COLOUR AND CONTRAST

Colour Blindness. affects approximately 1 in 12 men (8%) and 1 in 200 women in the world.

- Avoid expressing meaning strictly through colour. Combine text, graphic objects, and patterns, to add additional layers of meaning
- Check the contrast of your design for accessibility using the Web Content Accessibility Guidelines (WCAG)



## TYPOGRAPHY AND READABILITY

“No one has ever complained that something was too easy to read.”

- Many users require larger text so always support Dynamic Type and plan how your site or app will look accounting for these users
- Keep a consistent type hierarchy. It allows users to navigate fast through information and users with screen readers can understand it better
- Use a descriptive and informative page title
- Line height (line spacing) should be at least 1.5 times the font size
- Keep text lines short (users should be able to zoom 200% without having to scroll horizontally)
- Consider readability. Avoid large blocks of text which are hard to focus on, read, and tiring to consume

## NAVIGATION AND PREDICTABILITY

- Provide meaningful and actionable link descriptors. Avoid general links like “Click Here” or “Read More”
- Utilize a “Skip to Main Content” link if needed, this link should be visible only when focused upon
- Design should be consistent. Ensure components appear in the same order and maintain the design system, design patterns, and style guide
- Design clear focus states: allow users to determine where they are on a page without guessing and without the use of a mouse
- If possible, create more than one way to locate a web page
- Don't rely on device-dependent interactions. Always provide the user with an alternative route to reach information

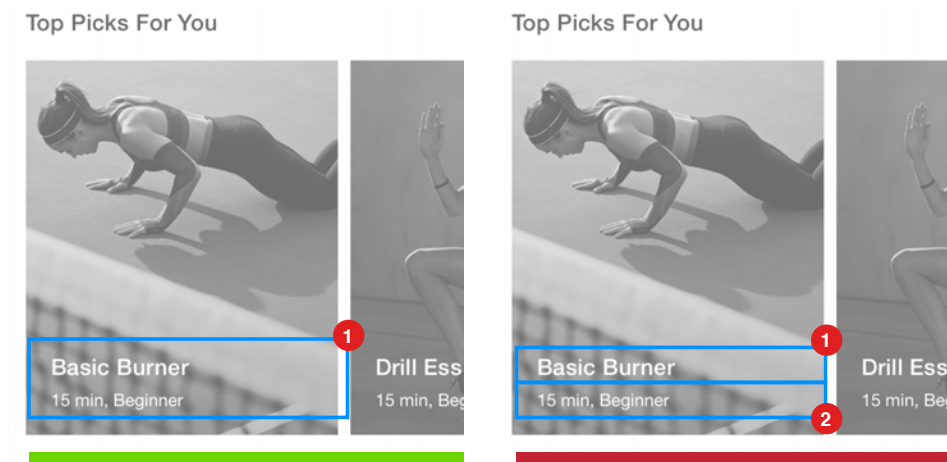
## MEDIA

85% of Facebook video is watched without sound.

- Provide video captions
- No content on the page should flash for more than three times per second unless it is small and low contrast and does not contain too much red
- If your product uses voice recognition, make sure you are considering different accents and speech difficulties

## READING ORDER, FOCUS, AND GROUPING

The reading order is the order of all the elements (interactive and non-interactive). It usually follows the sequence of the visual layout: left to right and top to bottom. The focus order is the order in which the user interacts with the elements. Grouping objects is essential for screen readers. Grouped interface elements must be represented as a single accessible component.



## IMAGES

- Provide alternative text for images to help the screen reader users. Avoid using images of text
- Alternative text should describe what's happening in the image and why it's important to the story

## FORMS

- Avoid hidden labels. Common or related elements should be grouped correctly
- Add instructions and help text, if necessary, and don't base error messages on color alone



## MOBILE ACCESSIBILITY

Not all the users can use a touch screen the way it was intended. For some, the mobile device may be mounted. For others, they might be accessing content solely through their keyboard or other additional technology.

Each mobile platform has its accessibility tools, such as a screen reader, voice recognition and dynamic type.

### Here are some rules for designing mobile accessibility:

- Ensure that touch targets are at least 9 mm high by 9mm wide, independent of the screen size, device or resolution
- If you use device motion (shaking or moving) or complex gestures provide alternative ways to make the same operation
- Don't restrict your design to only portrait or landscape, unless a specific orientation is necessary
- Use system native components and patterns as much as possible

## ACCESSIBILITY USER RESEARCH

- Cover accessibility and inclusive design issues
- Consider potential visual, hearing, motor, and cognitive disabilities
- Incorporate accessibility considerations in your personas, or user stories
- When possible, include users with different abilities in user research

## ACCESSIBILITY TESTING

- Test using assistive technology tools like a screen reader
- Learn how to navigate a web page using only your keyboard
- Adopt comprehensive user testing that includes users with different abilities while allowing them to use their assistive equipment

## GOOGLE LIGHTHOUSE

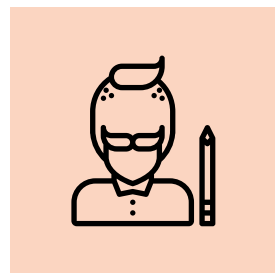


Lighthouse is an open-source, automated tool for improving the quality of web pages. You can run it against any web page, public or private. It has audits for performance, accessibility, progressive web apps, SEO and more.

# ACCESSIBILITY AT MOBILELIVE

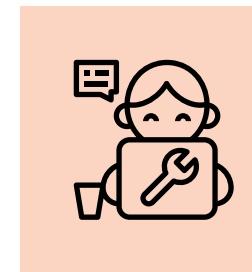
At mobileLIVE, empathy and inclusivity are part of our core values. We also understand the social responsibility and business value that comes from creating products that people can use and enjoy, regardless of their different abilities.

This empowers us to make accessibility **a team effort** at mobileLive, between product, designers, developers, and the test automation team.



## Product Design Team

- Research accessibility trends and regulations
- User testing with users that have different abilities
- Design experiences according to accessibility guidelines and with empathy towards the user
- Accessibility audits and detailed accessibility specifications and documentation



## Quality Assurance Team

- Automation testing for accessibility compliance
- Ensures AA standards are met for products
- Collaborates with teams to understand accessibility guidelines and regulations





## Development Team

- Consulting and support in all accessibility-related front-end development
- Design System creation according to accessibility guidelines
- Full implementation of AA accessibility standards internally, and AAA accessibility standards with clients



## Test Automation Team

-  Brad the Brand Compliance Bot: *“I crawl through all your pages to find any errors in brand compliance.”*
-  Helen the Health Check Bot: *“I always compare your accessibility performance against your competitors and give you a real time dashboard of how you’re doing!”*



# ACCESSIBILITY PORTFOLIO

## PROJECT: UX Accessibility Documentation

### Overview

One of the largest telecom companies in the market identified the need to update their products and create new ones according to accessibility standards.

### Challenges

Existing mobile applications were not built according to the accessibility standards.

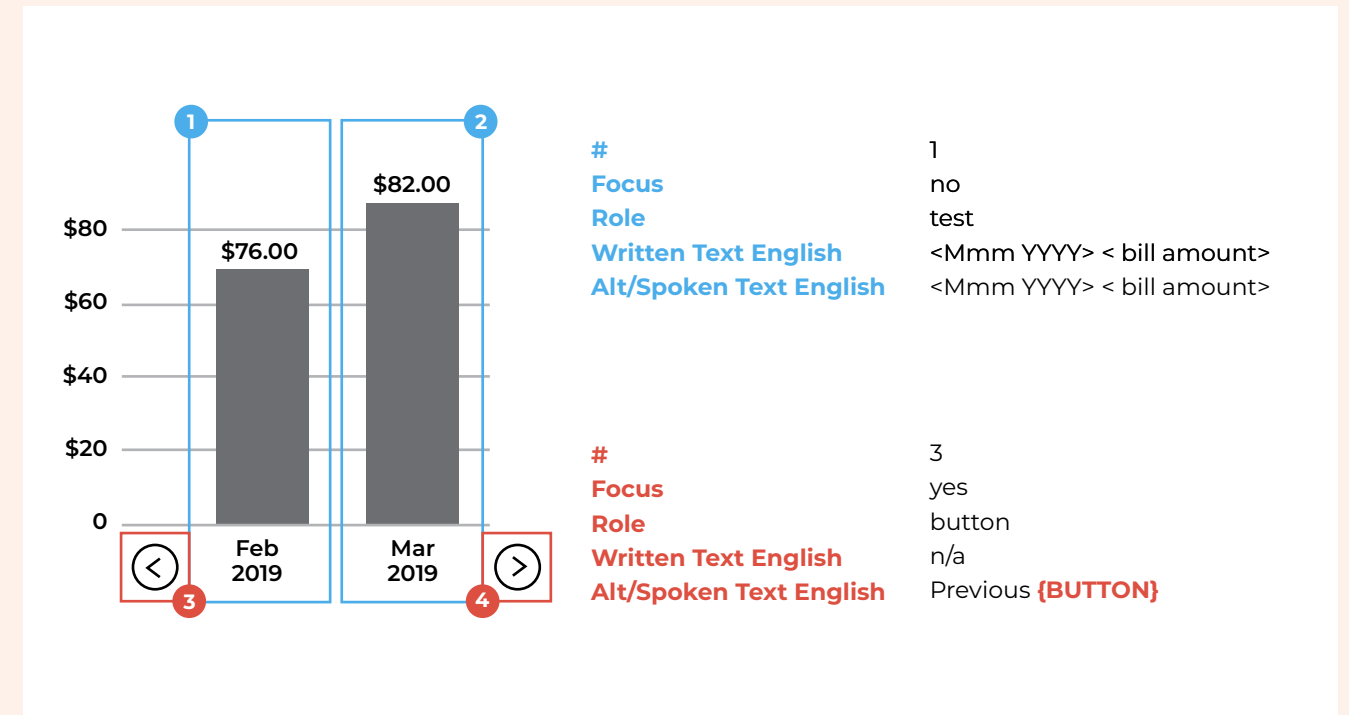
The company works with various development teams, some of them overseas, and the code standards between teams are not consistent.

### Goal

Create detailed mobile accessibility guidelines that can be used across the organization. Provide screen by screen voice-hover instructions and test criteria.

### Process

Our usability design expert worked as a part of a design team, providing detailed accessibility guidelines and screen reader specifications.



## OUTCOME

**Accessibility Design Guide:** a web site that contains accessibility standards and instructions for designers, developers, and QA.

**Accessibility Design Documents:** detailed grouping and voice-hover content documents. These documents are screen to screen specifications used for development and testing, allowing the company teams to fix their existing products and create future accessible ones.

# ACCESSIBILITY PORTFOLIO

**PROJECT:** Web Accessibility Automation 

## Overview

One of the the largest telecom companies in the market identified the need to ensure that the applications they develop adhere to accessibility standards.

## Challenges

The company has various development teams building many applications according to the accessibility standards. As part of the SDLC, daily code check-ins cause the accessibility standard to be broken.

## Goal

To proactively maintain the accessibility standards by preventing code breakages from occurring rather than detecting them after the fact.

## Process

Using our shift-left approach, automated accessibility testing will be integrated as part of Continuous Integration (CI) so that if the accessibility standard falls below 90%, no code will be checked into the repository. This will ultimately maintain the quality of the code.

## OUTCOME

Integrated test automation with bots so that no code would go into production or release that would compromise the accessibility standards.

I give you a real-time dashboard of how you're doing for accessibility!

**Prevention is better than detection!**

I check all your pages for brand compliance errors!



# ACCESSIBILITY WORKSHOPS



A research study of Fortune 100 companies indicates that disability inclusion, as part of an overall diversity strategy, is a common practice among high performing businesses.

## **Make accessibility part of strategic planning from the early stages of the project.**

As part of our commitment to empathy and inclusivity, we conduct training workshops to help you and your team understand inclusion and accessibility. Whether for both design and development or both - we can teach you how you can implement accessibility in your organization.

[Contact us to book a workshop](#)

## **WHO CAN BENEFIT FROM THIS WORKSHOP?**

Anyone involved in creating or managing digital content, such as product managers and owners, content writers, designers, developers and QA, or anyone within the organization interested in improving their understanding of accessibility.

## **ACCESSIBILITY WORKSHOP TOPICS:**

- What is accessibility?
- How do people with disabilities use computers?
- How accessibility benefits your organization
- Web Content Accessibility Guidelines (WCAG) and principles
- Designing for screen readers (grouping, reading, and focus order)
- Designing for accessibility (colour, navigation, typography, images)
- Designing accessible forms
- Research and accessibility testing tools
- Accessibility documentation

# About mobileLIVE

mobileLIVE is a Canadian tech-service provider unifying people, technology, and business to accelerate digital transformation.

We don't see this transformation as a choice anymore; rather an imperative. One that focuses on perfecting experiences, not just products and processes. One that empowers us to do more, by doing it more intelligently. And one that believes in the creation of tomorrow - today.

Our reputation - reliable; our industry recognition - notable; and our record of never having lost a customer - nonnegotiable.

At mobileLIVE, success isn't a decision. It is a choice. A choice to be better than yesterday!

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