Research Directory

Fable Managed Services

# Context

The Research Directory is meant to serve as a resource to Fable’s team of researchers when writing reports or wanting to learn more about how web and app components behave, based on past studies. It’s a collection of the most common takeaways (including pain and gain points) and best practices found through research with our customers’ products.

It’s important to keep adding content and revising the document so it continues to help us cut down individual work and transfer knowledge as we scale.

# How to use

1. Review the Table of Contents [TBD] to find the component or area you’re looking for.
2. Findings are organized by takeaways followed by best practices (where applicable). You’ll notice that some have different formatting structures. Find the one that best fits what you’re looking for or use a combination of several.
3. Be sure to read the content carefully and adapt it to the context of your study, with additional custom information. Any square bracketed section with a blue highlight, [example], is to be removed or adapted.
4. When pasting any content, ensure that it fits the appropriate format of your study.

## General / Best Practices

### Screen Reader

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Screen reader users need better focus management

**Context**

Screen reader users were left to explore on their own after activating an element without their focus being moved to a new heading or area of interest Similarly, they expected to be taken to the main heading when reaching a dialog rather than the container itself, [labelled simply as “dialog”].

**Why does this matter?**

Screen reader users thought that a control wasn’t working if they remained in the same spot. When focus was moved to a place other than what users expected (e.g., dialog box, not the heading), they were left confused and left to investigate. These distractions can derail users from completing their goal and become frustrated.

**What can be done?**

Ensure focus is immediately moved to appropriate areas so that users can navigate quickly and with context. Guiding users to where their attention is most important will help them remain focused.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Screen reader focus did not guide users well

**Context**

A screen reader navigates a page by moving ‘focus’ from element to element. In multiple locations, focus was not moved to expected locations.

**Why does this matter?**

When focus is not managed, screen reader users can easily become disoriented.

**What can be done?**

On the [“Your order”] page, focus should either move to the top of the screen or to the header for the active section.

When navigating through the [post-checkout screens], focus should be moved to the first heading.

When interacting with a button that opens a pop-up after closing the modal, focus should return to the trigger element [e.g., editing substitutions].

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Unlabelled elements make navigation hard for screen reader users

**Context**

Screen reader users faced labelling inconsistencies as they navigated, causing them to slow down and explore whether they missed something important.

**Why does this matter?**

Users risked missing important functionalities when reaching unlabelled elements. They often felt unsure whether they’re completing a process correctly and hesitated to interact with these components.

**What can be done?**

Ensure that any decorative elements are marked as such, so users know not to investigate further. Clearly labelling all other components, like gifs and animations, would help screen reader users feel confident that they completed their goal successfully and limit any mistakes in the process.

### Screen Magnification

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen magnification*
* *AT: All*

#### Takeaway [#]: Magnification users don’t see dialogs located outside of their viewport

While exploring the interface, magnification users were confused as to why they couldn’t activate elements that seemed clickable, [like the workflow title or the “add step” button.] They had no visual indication that something occurred elsewhere on the screen [and only landed in the help text dialog randomly, after exploring further].

In both standard and dark mode, consider providing a more obvious prompt to guide users to the middle of the screen, like dimming the rest of the content and making this section stand out using stronger borders or placing the help dialog near the top left so users can see it upon entering the page.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Takeaway [#]: Magnification users struggle with right-aligned elements

**Context**

While exploring different screens in the experience, one magnification participant who was zoomed in struggled to see anything located on the right as she was expecting elements to be placed next to related information.

**Why does this matter?**

This AT group risked missing important elements, like links and buttons, needed to complete the process. Navigating the entire interface requires significant time and effort, without guaranteeing that everything placed on the right will be discovered.

**What can be done?**

Consider placing elements on the left, near existing information that these users may be exploring. If not possible, ensure that they are prompted to look on the right, either by using help text or providing guiding visual cues, like borders and lines.

### Alternative Navigation – Switch System

### Alternative Navigation – Speech-to-Text

*Written for:*

* *Platform: Desktop*
* *AT Type: Alternative navigation*
* *AT: Dragon NaturallySpeaking*

#### Takeaway [#]: Voice commands don’t work as expected for a Dragon user

**Context**

Users couldn’t activate the command “show links” for interactive elements in the form field. When using click commands to select the [“create account” button, one user found that their focus remained in the text field, not triggering the button].

**Why does this matter?**

When entering text in form fields, it can be easy for errors to occur for AT users. They need to navigate easily between the fields to edit and adjust details. Without the ability to use their preferred navigation commands, users must resort to navigating using more cumbersome methods, like mouse-grid.

**What can be done?**

Often Dragon struggles to identify custom elements that don’t leverage native HTML. Exploring if these elements have custom attributes will likely uncover the programmatic cause.

## Colours or Contrast

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen magnification*
* *AT: All*

#### Takeaway [#]: The feature’s layout is hard to navigate for magnification users

Magnification users struggled to navigate the experience due to faint borders, lack of contrast, and large amounts of white space. Everything seemed to “blend in”, making it difficult to distinguish between types of content or a hierarchy of importance. While using the feature, users missed anything located on the far right as they had no prompt urging them to explore in that direction, especially when faced with areas filled by white space. Consider making different sections pop out using strong borders and lines or placing main CTA buttons closer to other information users may already be zoomed in on.

*Written for:*

* *Platform: Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Takeaway [#]: Magnification users want features optimized to support their experience

**Context**

In the [time-slot selection pop up], users couldn’t distinguish between different [time slots] since the lines around boxes were so faint.

**Why does this matter?**

Magnification users struggled to distinguish between different [time slots] and grew more fatigued as they looked through all the “white space.” They often needed re-scan or to use their own colour inversion tools to be able to explore the designs at all. Additionally, we heard feedback from users that they desire for features like font scaling and pinch to zoom to be optimized for the [product].

**What can be done?**

To solve these issues and further support magnification users as they explore, build out an optimized dark mode available in the [product] that users can toggle on.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen magnification*
* *AT: All*

### Takeaway [#]: Magnification users need higher contrast to distinguish button states

**Context**

Magnification users couldn’t differentiate between the different buttons on the page.

**Why does it matter?**

One user not only missed the button on the page, but struggled to tell which state the button was in. Additionally, using [grey lines on white, and grey shading for the button] made it challenging for some magnification users to see.

**What can be done?**

Consider using more vibrant colors, like black, and stronger contrast between the button and background to better support magnification users.

*Written for:*

* *Platform: Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Takeaway [#]: Grey text blocked magnification user from finding [a delivery slot]

One magnification user was blocked from [reading the prototype] due to the grey text used in the designs. The font was a thin weight and even when using their additional assistive technology features, like colour inversion, they could not modify the experience. When this user turned on their own colour inversion tool, any grey text on white background changed to grey-on-black and was still difficult to see. This issue has appeared in previous research done [on product], and the best recommendation is to consider moving away from using thin grey font across these experiences in favour of a higher contrast option, such as a bolder black font. Additionally ensuring that your designs account for font scaling so that users have the freedom to choose their font size to help with readability.

## Information Architecture

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader, magnification*

#### *AT: All*

#### Takeaway [#]: Filters are inconsistent

**Context​**

The layout of [filters between different pages] is inconsistent causing confusion and breaking user expectations.

**Why does this matter?​**

Screen reader and magnification users [skipped over the filters on the search results page because they weren’t automatically expanded, making it harder to hear and see].​ Because the [aisles result page filters] announce as links, screen reader users thought only one could be engaged.​ The inconsistency frustrated users because they couldn’t learn how to interact with the site quickly.​

**What can be done?**

Prioritize using the same component between different pages to help users set expectations for [the website].​

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*

#### *AT: All*

#### Takeaway [#]: Screen reader users can’t read individual search results

**Context**

[Because information is grouped together:​

If tabbing through items, all the product info is read out together​

If arrowing down with JAWS or NVDA, individual information cannot be read accurately​]

**Why does this matter?​**

Screen reader users also want to skim information, by requiring a user to listen through the entire product information to hear [price], they are drastically slowed down while also removing independence from the user in how they want to interact with a page.​

**What can be done?​**

Consider alternative methods for [creating large target sizes] that do not affect the performance of a screen reader.​

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen magnification*
* *AT: All*

#### Best Practice [#]: Use a clear outline on an opened menu to distinguish it from other content

Magnification users rely on high contrast and heavy weighted lines to differentiate between elements on the page. To separate out [the expanded menu] from the rest of the webpage, we recommend having a heavy weighted outline outside the [expanded menu] and a high contrast between the [menu] and the rest of the webpage when the menu is open.

*Written for:*

* *Platform: Desktop*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: Avoid large menu layouts and allow scrolling instead

Users prefer menu layouts that don’t take up a lot of screen space and risk missing content that can go below the fold or be too complex to navigate. Instead, they prefer layouts that are compact and use a scroll bar to move up and down the list. When using this layout keep in mind that users should always have access to the scroll bar when they are interacting with the menu.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Best Practice [#]: Ensure that the [menu button] is easily findable

Screen reader users navigate a web content linearly. Having the [menu button] placed as one of the first things that a user interacts with on the webpage improves its findability. This placement is useful both when the user initially starts navigating the webpage and also when they want to access the page after navigating other parts of the website.

### Spacing

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Best Practice [#]: Place carousel controls close to each other and the carousel cards

Screen magnification users struggle when navigation controls are placed far away from each other, as they must move across the screen every time they want to click on a control or locate the control within white space and this experience is not ideal for them.

Also, when navigation controls are not placed close to the carousel, screen magnification users may not know if this selection is a carousel or not. They may think the visible list of items are the only items available and be unaware of the total list of products. We recommend placing navigation controls together close to the carousel and ensuring their size is large enough to make them findable for users who use high screen magnification.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Best Practice [#]: Provide enough padding between products in a product card

Screen magnification users rely on padding to differentiate between sections on the screen. To help users easily differentiate between different product cards in a carousel and associated CTAs we recommend providing padding between product cards.

This best practice conflicts with a best practice for desktop to reduce white space between carousel controls and carousels, but it’s due to the modality difference between desktop and mobile interactions.

### Headings

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Screen reader users struggle with inconsistent heading structure

**What is going on?​**

Users were unable to consistently jump to [search result titles] when they tried to navigate with headings. ​

**Why does this matter?​**

For all screen reader users, when the expected behaviour didn’t work they were forced to find alternative methods to navigate, such as [slowly and frustratingly going through all filters first in order to find a product]. ​

Since some pages do have heading structure, users were confused why their shortcuts didn’t work for every page, reducing their confidence.​

**What can be done?​**

Ensure [products] have a heading level that is below the overarching heading structure and that this behaviour is consistent across the site.​

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: The [‘sports equipment’] section is hard to find without a heading

[We found this issue persistent in both the Compatibility test and the user interviews, where a section on ‘Sports equipment’ is not coded as a heading]. Screen reader users often navigate by headings, causing them to skip the entire section while navigating the page. Instead, users had to employ other navigation strategies such as arrowing through content or navigating by link to find the area.

We recommend adding heading level 2 or 3 markup for this section depending on how you would like the content nested within other sections on the page.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Screen reader users struggle to understand headings and their descriptions

While navigating the [website], screen reader users rely on descriptive text to orient themselves. We found that while navigating [the landing page], users sometimes struggled with understanding what the headings meant, forcing them to investigate sections rather than only interacting with the content they felt was relevant. The users found this issue persistent throughout the page [except for a few sections which had clear and direct labels for what they were offering]. Screen reader users prefer direct headings that leave little room for interpretation. Participants recommend labels that are direct and mention exactly what [products] the section would contain.

### Reading Order / Tab order

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Best Practice [#]: Ensure focus follows the expanded menu when it is opened

When a user expands the menu, they expect to be able to go through the menu items next as it conforms with their mental models. If the focus does not move to the first item on the menu next time the user moves focus, screen reader users might unknowingly explore other elements on the webpage thinking they are exploring part of the menu and thus go ahead with an undesired user journey.

To prevent this, we recommend focus to follow the expanded menu once the user expands it.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader, alternative navigation*
* *AT: All*

#### Best Practice [#]: Only interactive elements should be tab-able

Having multiple links that lead to the same place can cause confusion for AT users and increase the effort to complete a task by increasing the number of clicks. Likewise, elements that aren’t interactive e.g., [a price should not be tab-able]. We recommend having the whole card as a tab-able location that leads to the [product page] or just having the [product name] as the link, and then only links or buttons that lead to a different location in the tab-able so that there are fewer tabs needed for alternative navigation users.

### Wayfinding

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen magnification, alternative navigation*
* *AT: All*

**Takeaway [#]: Sighted users benefit from their button controls in the same relative area**

**Context**

Placement of buttons on the far right makes it difficult for alternative navigation and magnification users to find or interact with them.

**Why does it matter?**

For magnification users, gaps of white space between different controls broke up their workflow and left them guessing where others may be located on the page, risking missing them entirely. Alternative navigation users explained that they also prefer controls to be grouped together as this reduces additional navigation when using their AT.

**What can be done?**

Ensure that the button controls are placed near other controls so users can spot and engage with them quickly and easily.

*Written for:*

* *Platform: Mobile*
* *AT Type: Screen magnification*
* *AT: All*

### Takeaway [#]: Magnification users prefer a layout where they scan in one direction

Magnification users must zoom in and view the already small mobile screen with an even smaller zoom window as they navigate. When using this small field of view, they appreciate being anchored as they scan in one direction. For example, [when scanning a single vertical column of products, they only need to scan in a one line, top to bottom, and they will view the products in that list]. However, if there are multiple columns of [products/elements], magnification users must scan in multiple directions, from top to bottom then left to right, to ensure they have reviewed all the available products listed. This experience felt disorienting and fatiguing.

**What can be done?**

Consider giving the option to show only a single column of items to review, so that magnification users can customize the experience to better suit their needs.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Users find it difficult to manually navigate to the [gift cards section]

Users struggle to locate the [gift cards section] when manually navigating the [website]. Typically screen reader users navigate a homepage via headings or links, in the current experience users do not have a way to easily access [gift cards] using these usual methods. However, users like that [gift cards] were easily navigable via [the search option].

We recommend providing several different ways for users to access the [gift cards section]. Consider access points to a site map as an alternative to the [departments menu].

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Screen reader users expect to find the search results with minimal effort

Screen reader users found themselves stuck [tabbing through all filters and controls] at the top of the search results, without a way to skip to their desired results more quickly. Consider allowing users the ability to use known keyboard commands for jumping to the main content, [such as using F6].

## Images

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Information presented as an image is missed by screen reader users

**Context**​

[Nutritional facts] are only presented on the website as images, making it impossible for screen reader users to access the information.

**Why does this matter?​**

Screen reader users said this would be a breaking point to decide if they would or wouldn’t use a [website for grocery shopping].​

Users shared experiences of [buying products without knowing the nutritional facts only to find out it’s something they couldn’t eat because of diet restrictions].​

Screen reader users felt left out because many websites don’t provide this information in an accessible format.​

**What can be done?​**

Users wanted a properly structured HTML table of [nutritional facts that was located under the nutritional information] header or even reachable at the [top of the page].​

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Screen reader users want decorative images to be skipped by their AT

The [landing page consists of several images present in every section]. We found that testers preferred the current experience of having those images as decorative as they didn’t convey meaningful information from their perspective and therefore liked that their screen reader ignored the images.

*Written for:*

* *Platform: Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Takeaway [#]: Relying on product images without text is hard for magnification users

**Context**

[Magnification participants discussed the possible scenario of searching for a specific item in an order and finding it difficult to make out this information from the purchase history], considering that the product images didn’t contain supporting text to help them identify it.

**Why does this matter?**

Relying solely on graphics would require magnification users to [select the order and continue to search for additional details within], causing a lot of frustration and a potential risk that they may abandon their goal altogether.

**What can be done?**

Consider ways to allow users to [expose a product’s name], such as by allowing alternative views or feature toggles to help remedy this challenge.

## Custom Components / Behaviours

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader, alternative navigation*
* *AT: All screen readers, Dragon NaturallySpeaking*

#### Takeaway [#]: The [“Signed in”] tooltip​ announces as a link

**Context**​

The [tooltip] looks and announces as a link, causing confusion with all users on how it would behave.

**Why does this matter?​**

[Some screen reader users thought they had been signed in or that it was the sign in button,] causing them to pause and re-search the page for clarity​.

[For Dragon users, when saying “click sign in” it triggered the tooltip to open instead of signing them in​].

No user was able to predict how the element behaved.​

**What can be done?​**

Ensure that tooltips visually and programmatically match their functionality.​

*Written for:*

* *Platform: Desktop*
* *AT Type: Alternative navigation*
* *AT: All*

#### Takeaway [#]: Alternative navigation users struggle to interact with unique elements

### Context

The [price filter has a sliding bar that allows users to set a price range for the items shown]. Alternative navigation users struggled to know how to use their AT to interact with [unique filter] interactions like this one.

**Why does this matter?**

Typically, alternative navigation users struggle to perform more complex interactions like click and drag, as it requires advanced understanding for how to perform these interactions using their AT. This can result in very few AT users knowing how to successfully interact with the element.

**What can be done?**

By providing alternatives to interact with these elements, you can better support these users. Consider adding alternatives that only require to clicking or typing into an element, such as [adding arrow keys to adjust the price or a text box to input a range or max price].

*Written for:*

* *Platform: Desktop*
* *AT Type: All*
* *AT: All*

#### Takeaway [#]: Quantity steppers require a steep learning curve for new users

#### Context

After interacting with the stepper to adjust quantity, [the stepper doesn’t ‘close’ for users after its interacted with].

**Why does this matter?**

For screen reader users specifically, [having to manually check your cart to confirm it’s been updated] can slow a user down.

[If mouse users click off the stepper it collapses, this is not true for keyboard users].

**What can be done?**

Collapse the stepper for screen reader users when the element loses focus. Also consider giving screen magnification users the ability to click on the number to collapse the stepper [as there is not ample room to click off].

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: Avoid autorotating carousels as a default

AT users struggle to navigate and make sense of a webpage when certain features automatically change in the default state. These features may cause focus issues for AT users.

We recommend having a paused default state and give the control to the user to turn it on.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification, alternative navigation*
* *AT: All*

#### Best Practice [#]: Provide navigation alternatives and avoid infinite scrolling

Some AT users prefer to navigate [products in a product listing page] and some do not like the experience of scrolling through [products] infinitely.

We recommend providing the option to navigate [products] in a different layout than carousels such as [linking out to a curated products page or search results page.] This was preferred over longer carousels.

### Feedback

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Pages in the [“reset password”] flow​ changed unannounced

**Context**​

In the [password reset flow], the page does not tell users that content has changed.

**Why does this matter?​**

Screen reader users often sat on the page waiting for it to load, then would think that the button was broken. They’d search the page to realize it had changed unannounced.​

Screen reader users said this behavior would be especially challenging on a day they have bad internet.​

**What can be done?​**

Direct users between pages so that there’s feedback for successfully completed actions.​

### Carousels

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen magnification, alternate navigation*
* *AT: All*

#### Takeaway [#]: Sighted users struggle to engage with carousels due to overlapping CTAs

**Context**

AT users found the carousel experience difficult to interact with as the [navigation buttons] overlapped with the [product] CTAs. Magnification and alternative navigation users expressed that this overlap decreased the touch target of the partially hidden CTA, requiring precision in order to engage with it. They also mentioned that this kind of an interaction decreases their confidence while navigating.

**Why does this matter?**

Users expect to move within the carousel seamlessly and [make quick purchases]. In this case, users are unable to move through the carousel easily as the navigation button target area is not clear. They were also unable to [add certain products to cart] quickly as their CTA is only partially visible.

**What can be done?**

Consider alternative placements for the [navigation buttons] to prevent any chance of overlap with [product cards].

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Best Practice [#]: Ensure magnification features don’t interfere with carousel scrolling

Scrolling can be difficult for magnification users as they have a limited view of the screen at a time. Sometimes when they swipe to see the [next product] on their mobile viewport, they unintentionally move to the next carousel page and completely skip the [remaining products on the first]. Users find this experience time-consuming and look for other ways to navigate the app such as [using the search].

This challenge will persist as long as a carousel can be controlled through swipe actions. Consider reducing the width of cards so that when zoomed in, users don’t have to pan over text in the carousel to read. This challenge didn’t occur with carousel designs with heavy truncation, which is recommended against. When actioning [best practice 7], avoid truncating text, consider impact on this best practice as a result.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Best Practice [#]: Notify users when they [add a product to cart] from the carousel

Screen magnification users might [add a product to cart unintentionally] while swiping through a carousel as the hit area for the [“Add”] CTA might overlap with their swipe action. Users mentioned they have made purchases in the past that they did not want because of a lack of these type of alerts. To prevent users from actioning something unintentionally, we recommend notifying them [if they add a product to cart from a carousel by showing directly on the product tile] but also making sure that the [added] state is visually distinct from add to cart CTAs.

This best practice can be applied to both mobile and desktop.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Alternative navigation*
* *AT: All*

#### Best Practice [#]: Ensure alternative navigation users can center carousels on the screen

Alternate navigation users commonly use the scroll command to scroll down the screen on mobile and they do not have control over the length of the scroll. When they scroll through the app using this command sometimes only a part of the carousel is visible at a given point. Even though they are aware of workarounds for this issue and can switch modes to center the carousel on the screen, they mentioned that this discourages them from using carousels at all.

While it’s unlikely you will be able to control the amount a user swipes down a page, consider if a button to move a user’s viewport when selected is a functionality you want to explore or if there are other innovative ways to center the element without disrupting other users.

This best practice is applicable to both desktop, iOS and Android mobile.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification, alternative navigation*
* *AT: All*

#### Best Practice [#]: Ensure that sighted users are aware they can swipe through [products]

Screen magnification and alternate navigation users prefer when a carousel shows half a [product card] in the viewport as it tells them that there is more to this area and helps identify the element as a carousel. Alternatively, providing carousel controls can clue users into the additional content.

#### 

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: Provide multiple ways to control a carousel to cater to preferences

Carousel navigation preferences differ between and within AT types. Some screen reader users might prefer keyboard shortcuts to move within the carousel, whereas some users might prefer to click and pan left or right through a carousel.

#### Allowing mouse, keyboard and CTA controls for the carousel increases who can interact with the element.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: All navigation controls present should be interactive

Navigating within the carousel can be challenging for AT users when not all the navigation controls are interactive. For example, some carousels have an array of dots signifying the number of screens on the carousel and an increased dot weight indicating the current screen of the carousel. Users expect the pagination dots to be interactive and selectable for easy navigation between different screens.

### Tiles / Cards

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Content blocks that act as a link behave poorly for screen reader users

The [landing] page includes content blocks containing a [heading level two, flavour text, a hero image and then a shop now link]. Because of how the content is structured programmatically, screen reader users hear [redundant links]. Participants discussed that although this experience doesn’t make the page unusable, it does affect their overall usability of the page.

Additionally, [having the three pieces to these blocks] each identified as links but read separately when navigating by arrow keys. This caused confusion for screen reader users as to what these three links would lead to.

When creating a link that also contains a heading, you always want the heading element to be nested within the anchor (e.g., link) element instead of the other way around.

## Buttons and Links

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen magnification, alternative navigation*
* *AT: All*

#### Best Practice [#]: Always have large target areas, especially for CTAs

Alternative navigation and screen magnification users struggle navigating experiences that have small elements and limited target areas as these elements require precision to access. Though users might be able to complete a task, the overall experience becomes tricky to navigate. We recommend having large target areas, for desktop larger than [WCAG target size guidelines](https://www.w3.org/WAI/WCAG21/Understanding/target-size.html), and make them clearly visible.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen magnification, alternative navigation*
* *AT: All*

#### Best Practice [#]: Provide clearly visible focus with strong contrast and weight for outlines

Alternative navigation and magnification users might use tabbing to navigate a webpage and access important interactive elements. Having a clearly visible focus state helps the users know their current focus position, in turn reducing time spent and increase user satisfaction with the [web] experience. Ensure focus has at least more than 1 pixel width and uses high contrast colors with background colors.

### Inactive

### Labels

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader, alternative navigation*
* *AT: All screen readers, Dragon NaturallySpeaking*

#### Takeaway [#]: The [phone number] input field​ lacks clear labelling

**Context**​

The [phone number] input field does not have a programmatically associated label.

**Why does this matter?​**

Screen readers had no idea what the purpose of the input field was, some skipping it entirely and others moving to search the page to try and understand its functionality.​

[Dragon] users could not use voice commands to trigger the field and had to use other methods to reach the element.​

**What can be done?​**

Ensure that all input fields have an accessible label, even when they are optional. ​

*Written for:*

* *Platform: Desktop*
* *AT Type: Alternative navigation*
* *AT: Dragon NaturallySpeaking*

#### Takeaway [#]: Alternative navigation users can’t consistently use voice commands

**Context**​

[When logging in], Dragon NaturallySpeaking users couldn’t engage or type into the field with voice.

**Why does this matter?​**

Not all Dragon users have alternative methods to interact with a page. Not being able to type into an input field means some users would never be able to [log in].​

Additionally, the field is mislabelled, causing some confusion with screen reader users not knowing a [phone number] could be used in the field.​

**What can be done?​**

We pinpointed the issue to the [“type=username”] attribute in the code. When switched to “email” the field became functional, so further exploration will be needed.]​

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Button lacks clear labelling

**Context**

The button does not tell a screen reader user what the actual functionality of the button does along with no feedback once pressed.​

**Why does this matter?​**

All screen reader users who interacted with the button began to explore the page for if an unknown element appeared on the page.

Users were reluctant to search for alternatives and assumed they just wouldn’t be able to use [part of the website] because it seemed like a key feature to the page.​

**What can be done?​**

Ensure focus is also managed when moving the viewport. With this, add additional details to the button to better set user expectations.​

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Screen reader users like the labels in the [‘Shop by category’] section

Screen reader users appreciate clear and direct labels. While navigating the [landing] page the testers mentioned liking the labels of [“Shop by category” section and the product categories under it]. They found the category labels simple and straightforward which helped them make a confident decision while navigating the page.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Unlabelled elements make navigation difficult for screen reader users

**Context**

Screen reader users faced several labelling inconsistencies as they navigated, causing them to slow down and explore whether they missed something important.

**Why does this matter?**

Users risked missing important functionalities when reaching unlabelled elements. They often felt unsure whether they’re completing a process correctly and hesitated to interact with these components.

**What can be done?**

Ensure that any decorative elements are marked as such, so users know not to investigate further. Clearly labelling all other components, including visuals like gifs and animations, would help screen reader users feel confident that they completed their goal successfully and limit any mistakes in the process.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: The amount of information feels inconsistent throughout the experience

**Context**

Users found that they either received too little or too much identifying information while navigating. It often wasn’t clear what element screen reader users were interacting with. Conversely, when navigating into a new section, some found that there was too much information read, making it hard to catch the important bits.

**Why does this matter?**

If elements are too verbose when read out, it can overwhelm users as they try to understand what to do next. They may miss key information at the end of their screen reader speech, like navigation hints. Too little information slows users down and requires additional investigation.

**What can be done?**

By ensuring elements are identified correctly [edit fields announce as interactive], this sets users up for success. Users wanted more context when interacting with the [menus for channels and direct messages in “Home”].

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Best Practice [#]: Ensure that there are no unlabelled items on the menu

Screen reader users rely on accurate labels to navigate experiences. Having missing or inaccurate labels for items in the [menu] creates a subpar experience as the users miss out on experiencing the full range of items that are provided by [the website] and also might decrease their confidence in navigating other sections of the [website].

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: Ensure only necessary information is surfaced on product cards

While no user explicitly mentioned verbosity as an issue with the carousels explored in the study, users noted their preference for clean, less cluttered designs. The balance between too much and too little information makes this best practice difficult to evaluate but screen reader users and alternative navigation users that leverage tab both preferred carousels with less content overall.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: Use concise naming and avoid repetitive words for menu items

AT users appreciate conciseness when it comes to naming of menu items as it helps them go through the menu quickly and confidently. If subsequent menu items use the same first words, magnification users have to move left and right to see the full menu item name to differentiate between items. This kind of experience causes frustration as Mega Menus generally contain a large number of items and going through the list would involve a lot of movement for them thus creating a less than ideal experience.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Best Practice [#]: Avoid truncating text in cards, especially titles

Carousels provide a quick way for users to [add products to cart]. For users to make this decision confidently, they usually expect to have all the important information present in the [product cards] in the carousel. By having truncated text, users may be missing out on important information [regarding the product] and spend time going into product pages.

We recommend avoiding truncated text in [product] titles as much as possible but alternatively have a way to access the [full product name] without requiring customers to navigate to the [product information page] such as exposing the entire title to screen readers and allowing the title to be exposed on hover or tab.

### Text

## Dialogs and popups

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Users aren’t aware they’ve entered the [‘Added to Cart’] modal​

**Context**

Once a user [adds an item to cart], they are moved into a modal that doesn’t get announced. Because users didn’t realize where they were, they would use shortcut keys and escape into the background while still having the modal open above content.​

**Why does this matter?​**

Some screen readers didn’t know [when they had or hadn’t added products to their cart] because they didn’t experience any feedback.​

For all modals, [users were able to move into the background] which caused them to have to re-orient themselves at times.​

**What can be done?​**

Ensure that users are notified that [something was added to their cart] while also trapping focus in modals for screen reader users.​

*Written for:*

* *Platform: Mobile*
* *AT Type: All*
* *AT: All*

#### Takeaway [#]: Navigating many screens or modals is cumbersome for AT users

**Context**

AT users were surprised to find lots of modals in the experience, noting that simple text or dropdown menus would be more appropriate in most scenarios.

Similarly, they preferred to see informational text better consolidated throughout the experience instead of having to navigate a new screen.

**Why does this matter?**

Navigating modals poses challenges for AT users, particularly if not implemented correctly (e.g., hidden “close” buttons, poor focus management). This can frustrate and derail users from their goal, especially if there are many steps already involved in the process.

**What can be done?**

Consider organizing information so that there is less need to navigate in and out of modals. Elements like dropdown menus and static text can be good alternatives. If modals are a must, ensure they are implemented correctly, considering the needs of the different AT user groups.

## Error Messages

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen reader*
* *AT: All*

#### Takeaway [#]: Error messages across the page are inconsistent

**Context**​

Users were not consistently notified of errors and had to search the page item by item to find issues.

**Why does this matter?​**

Screen reader users thought the page hadn’t loaded after hitting ["continue"] buttons, waiting for feedback that would never come. ​

Users heard the aria-live region sometimes, so when not all error messages announced, it caused confusion.​

Users typically tab through a form but searching for inline errors required an unexpected navigation method for forms.​

**What can be done?​**

Treat error messages consistently throughout the [site] and associating them to edit fields themselves aids identification.​

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen reader, magnification*
* *AT: All*

#### Best Practice [#]: Use concise phrasing and avoid repetitive words for error messages

Long error messages require more time to be read out by a screen reader and magnification users must pan around the screen more in order to read the complete message. This may cause screen reader and magnification users to miss out on important parts of information and make it difficult or more time-consuming to rectify the error. Having succinct error messages that focus on the issue clearly and avoiding repetitive words would help make the process of navigating error messages better for these AT groups.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: Ensure the error message is descriptive and helps users rectify it

Along with providing details on the exact issue that is causing the error, the message should also provide ways for users to rectify the error or at least guide them to potential next steps. Having a complete understanding of the issue help user correct the error. Also, if the user is not aware of potential solutions to the error, the directional support may help them move forward in their journey.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen reader*
* *AT: All*

#### Best Practice [#]: Ensure that focus follows the field with an associated error

Once the screen reader user is introduced to the error message, the focus should follow the fields that require correction instead of it moving linearly on the page. This process can be time-consuming on a busy page and also might distract the user from moving ahead in their journey of rectifying the error.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Best Practice [#]: Ensure the error message is visibly close to the error field

Magnification users have a limited view of the screen at a given time and if the error message is placed out of their current view, there is a high probability that they won’t notice an error at all and instead try to move ahead in their journey without success. This can cause frustration and confusion and prevent users from completing their goal. This issue can be prevented by ensuring that the visual indicators are easy to see.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification, alternative navigation*
* *AT: All*

#### Best Practice [#]: Ensure the error state is easily distinguishable from other content

When an error occurs, users expect to be visually notified about it happening. This can happen in a lot of ways, with the most common being use of red colour which usually signifies something wrong has occurred. To avoid the risk of users missing the error message, ensure that it is visually distinct from the rest of the content on the page.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: Avoid clearing content automatically when an error occurs

Re-inputting data can be a time-consuming and frustrating process for AT users specifically for voice dictation users as they have to be precise when dictating content for the form fields. In the case of long and complicated forms, this can worsen the experience for users as they will have to redo the whole process again. If a user wants to check back on a previous input this can also be an issue. We recommend giving the user the control to remove or edit the data once an error occurs.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: Avoid having error messages that disappear automatically

Error messages that disappear after a fixed time can cause user frustration if the user misses out on all or part of the information presented in the message by not having enough time to review it. This also causes an issue when the error message is placed away from the user’s current focus area as they might miss out completely and get stuck in the journey with no feedback. We recommend avoiding timed error messages and instead giving users the control to close the message via an easily accessible close button.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen reader*
* *AT: All*

#### Best Practice [#]: Ensure the error message is automatically read out by a screen reader

New content on the screen that appears automatically can be missed by screen reader users if the screen reader does not read out the content automatically once it appears. In the case of error messages, this is especially important as the user needs to be aware of their current status in order to remediate it and move ahead in their user journey.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen reader*
* *AT: All*

#### Best Practice [#]: Ensure screen reader users can access the error message more than once

Error messages can be complex and may require more than one glance to go over the issue or the user might want to recheck the error. We recommend providing ways for users to easily access the error message again if they need to go back to it.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: For multiple errors, provide a list summary of all

Having multiple errors can be difficult to manage if users don’t have a clear picture of all the errors in one place as they have to go back and forth between content on the page to make sure they know what they want to rectify. Providing a summary list of all the errors in one error message makes the process simpler for users as they have a common place to check or verify their status on the error.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification*
* *AT: All*

#### Best Practice [#]: Ensure the error message font is large enough for magnification users

Magnification users zoom in on the screen to read through content on a page. If the original text is small, users must zoom in even more than they do on the rest of the page. Another risk associated with this is that the smaller text can be hard to see as it can become pixelated. We recommend making sure that the error message font size is comparable with similar elements on the rest of the page.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: All*
* *AT: All*

#### Best Practice [#]: Ensure that error messages have icons associated with them

Along with a descriptive but succinct error message, make sure error messages have icons associated with them to help users easily identify the error message from the rest of the content on the page. Icons help bring users’ attention to the issue and can direct users to the message easily especially on a busy page.

## Tables

## Menus

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Alternative navigation, magnification*
* *AT: All*

#### Best Practice [#]: Ensure that users can easily distinguish between menu items

Alternate navigation and magnification users struggle to differentiate between elements on the page when there is a limited amount of white space or when there is no other affordance that lets them separate the sections clearly. In the case of menus, users appreciate when the menu items have enough white space or if there is a line between items to make the differentiation clearer.

*Written for:*

* *Platform: Desktop*
* *AT Type: Alternative navigation, magnification*
* *AT: All*

#### Best Practice [#]: Provide a back button on accordion-style menus

Accordion style menus provide a great way for users to focus on just one part of the menu at a time, either the main menu or one of the sub menus. Users appreciate having access to a back button when they are navigating a sub menu to return to the main menu quickly.

*Written for:*

* *Platform: Desktop*
* *AT Type: Alternative navigation, magnification*
* *AT: All*

#### Best Practice [#]: Ensure that the menu does not require hover to remain open

Hover-only menus are difficult for AT users to control as they can often unintentionally disappear, forcing users to re-orient themselves on the page and the element they were interacting with. We recommend giving the users the power to control the opening and closing of the menu.

*Written for:*

* *Platform: Desktop*
* *AT Type: Alternative navigation, magnification*
* *AT: All*

#### Best Practice [#]: Ensure that the selected state for menu items is clearly visible

Alternate navigation and magnification users appreciate a clear selected state as it eliminates the need to fish out their current selection within the menu. We recommend using high contrast colours and heavy weight for a selected state.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Best Practice [#]: Ensure the menu button is clearly labelled and its state described

Screen reader users rely on labels and supplementary information to make sense of elements on the [webpage] and to move ahead in their journey. For users to confidently interact with the menu button, they rely on the label information being present when they first encounter the button. Also, knowing the exact menu state (e.g., collapsed or expanded) helps guide their next steps. Providing supplementary information such as ways to close a menu also helps users.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen reader*
* *AT: All*

#### Best Practice [#]: Label menu elements as buttons to conform to users’ mental models

Screen reader users usually look for buttons present on the page when they are trying to access the menu as this conforms to their mental models. Having the menu element as a link deviates from this and thus might take them more time to start accessing the menu or access it at all.

## Multimedia

## Text

*Written for:*

* *Platform: Desktop*
* *AT Type: Alternative navigation*
* *AT: All*

#### Takeaway [#]: Alternative navigation users lose inputted information without warning

Typing is cumbersome for switch users who must exercise extreme precision when typing that can cause significant discomfort. [Having inputted an address in the email field, a switch user mis-clicked into a nearby area, losing all information he had previously typed in]. Having to enter the [email] again, character by character, caused frustration as the process is time-consuming and uncomfortable. The ability to more easily autofill and save contents would be beneficial for alternative navigation users who must exert greater effort when typing or selecting an element.

## Buttons and Links

*Written for:*

* *Platform: Desktop*
* *AT Type: Alternative Navigation*
* *AT: VoiceControl*

#### Takeaway [#]: Voice Control users can’t toggle “show password” using numbers

To use Voice Control on a password field, the field must be explored. The user expected to toggle the [“show password”] element with his preferred command however, this element was not properly numbered. Instead, he needed to take additional steps to use MouseGrid to select the toggle. [Although this was not a major blocker for the alternative navigation user,] he expressed that this slowed down the sign in process as he had to switch away from his preferred method of navigation.

##### 

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen magnification, alternative navigation*
* *AT: All*

#### Takeaway [#]: Sighted users are missing support for focus and hover states

Magnification and alternative navigation users faced issues with clear and consistent focus and hover states when interacting with various elements. For magnification users, the subtle hover interactions did not strongly indicate a state change, requiring them to zoom in further when navigating to know which items are interactive. Similarly, alternative navigation users stated that the visual indications of the areas in which they navigate aren’t clear enough and that better highlighting would be helpful to understand where they are and what keyboard keys to use.

*Written for:*

* *Platform: Desktop*
* *AT Type: Screen magnification, alternative navigation*
* *AT: All*

#### Takeaway [#]: AT users expect to find keyboard shortcuts more readily available

AT users who are new to using keyboard shortcuts on [product] rely on help pages to find the right shortcut. During the study, AT users had to use search to look for shortcuts and expressed the need to have an easier way to get to them. Consider placing a help page link somewhere in the navigation menu for quicker access.

*Written for:*

* *Platform: Desktop, Mobile*
* *AT Type: Screen magnification, alternative navigation*
* *AT: All*

#### Best Practice [#]: Isolate important CTAs and make them easy to identify

CTAs are an important part of web navigation experience. To have a good user experience, isolate important CTA’s such as [‘add to cart’, ‘next’ and ‘back’ in the carousel], from each other or other content. If these CTAs are not easily identifiable users might be unable to select or engage the elements.