Website usability assessments

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WCAG (Web Content Accessibility Guidelines **www.w3.org/TR/WCAG21/**) audits take a sample pages approach to assessing the accessibility of a website. Yet a usability assessment carries out analysis of a number of typical representative user journeys on the website to check what accessibility and usability issues can arise for users of access technologies.

In a usability assessment the emphasis is on looking at the usability of the site and providing recommendations on what can be improved to make it easier to complete the user journeys successfully.

RNIB usability assessment of websites are carried out with the screen readers most commonly used by blind people and on the browsers that provide the best experience with that particular screen reader. This means that the site will be tested with JAWS on Chrome and with NVDA on Firefox.

In addition, the user journeys are carried out with magnification software and with the Windows High Contrast scheme. As the majority of sites are designed to be viewed on mobile devices, the tasks will also be carried out on an iPhone using the built-in screen reader Voiceover on Safari.

The issues mentioned below are being used to provide an idea of the type of issue that can be highlighted by the usability assessment, the list is not exhaustive.

Speech usability issues raised in usability assessments

Screen readers are software programs that allow blind or partially sighted people with little useful residual vision to read the text that is displayed on the computer screen via synthetic speech or a braille display. When using a screen reader, all interaction is done using the keyboard and not the mouse. Speech is sequential as each element is reached separately starting from the top left of the page down to the bottom right corner.

In order to speed up navigation when using a screen reader and enable users to move around the page quickly and easily most screen readers provide a number of navigation shortcuts to allow less sequential movement through the page. This is achieved via the use of screen reader specific keystrokes.

Missing Heading 1

One of the possible ways to move through a page quickly that a screen reader allows is via headings. Screen readers allow you to move from heading to heading or to a heading of a specific level. Jumping between headings lets the user navigate quickly through elements on the page and build up context, a heading 1 should signify the start of the main content.

This means that each page should have a clear heading 1 which not only provides confirmation of what the content of the page is but also

an anchor point that users can go to quickly to start getting to grips with the main content of the page. This jump allows the screen reader user to by-pass information or elements such as menus that can repeated on all the pages of a site and the user does not need to access or navigate through on each page making the process of finding information quicker.

Page structure – missing headings or illogical heading levels

The overall structure of a page can be seen visually by a sighted person immediately on opening the page, whereas a screen reader user needs to build a mental model of the page because of the sequential nature of speech. This makes it harder for a screen reader user to understand the page.

Understanding the structure of the page is aided by using a good heading structure which is logically correct (i.e. H1 followed by H2, H3 etc.). Visually this will be done using font type, weight and size but it must be done correctly in the coding to ensure that this information is provided to speech users.

Uninformative labelling of interactive elements

In order to make the task of finding information on the page quicker and more efficient than moving down a page sequentially, all screen readers allow the speech user to access a list of all the occurrences of a specific type of element on the page, this could be a list of all the links or all the buttons for example.

When links and buttons are accessed in this list they are isolated from their context and therefore the wording used for each needs to make sense in isolation. If there is on the page a series of buttons that are all called "Find out more" these buttons will not make sense when viewed out of context in the list and so the user will be forced to go through the page to find out what each "Find out more" button refers to. The label for the button or link should provide context.

Repetitive feedback for images

If an image is cosmetic and associated with text, such as an image showing a category of clothing next to the name of the category or a telephone icon next to a telephone number, it is perfectly acceptable for the image to be ignored and given null alt text. These images are not providing additional information and they do not need to take the focus or provide feedback.

However, if the decision is made to ignore the image it must not affect the experience for a screen reader user when accessing the website on a mobile device. There must not be large spaces that do not provide feedback to the user on mobile which can happen if the images are large and have null alt text. In this case provide a short description of the image, or, ensure that the focus includes the text and the associated image so that feedback is provided for the whole area where the image is showing.

Lack of feedback for actions

One of the most important things that will enhance the usability of a website for a speech user is clear feedback regarding what they are going to do and what has happened. This is often lacking for a speech user – visually the changes on a page can be seen but unless the page title or other feedback provides this information it can take a long time to work out what has happened.

Sometimes a user's action causes an effect elsewhere on the page and it can be difficult to know this when using speech. When actions take place such as adding a product to a basket, visually it is clear that something has happened as a basket pop up has appeared or a number changes by the basket icon.

The same can occur when filtering against specific options, such as when browsing for clothes. When automatic filtering is used the results update when an item is selected, and this is often only evident visually when new products populate the page. A speech user does not know that the page has produced new results and will be looking for a "go" button to confirm the filtering. Therefore, provision needs to be made in speech to tell the speech user that something has happened. Automatic feedback such as "added to bag" or "filters applied" could be used or an alternative method that is easily discovered by a screen reader user.

Missing error notifications

Error messages are often hard to find. Highlighting errors as the user fills in the form is helpful to sighted people, but a screen reader user will not be aware that errors have occurred. It is important that a clear warning is provided to screen reader user so that they cannot submit the form or proceed to the next stage because something on the page needs rectifying. Often the submit button is dimmed until errors are rectified, it is then not clear why the button is dimmed. A clear indication is needed that the button is not available due to errors.

It can be difficult in speech to tell the difference between an error message and an instruction. For example, "please enter a value" can be seen an instruction. However, visually it might be clear that it is an alert or error because of the font attributes

Reviewing a form with errors can be difficult as while a sighted person can see immediately where the errors are and home in on those fields, a speech user will need to review each individual form control. A mechanism to make this easier should be implemented. This could be achieved with the implementation of a list of errors at the top of the page that takes the focus when the user tries to submit the form. These error messages could be links that take the user to the field in the form that needs to be corrected.

Some examples of magnification usability issues raised in usability assessments

Magnification software allows users to magnify what is on screen, and this means that the overview of the page is lost and only a small part of a page may be visible at any one time depending on the level of magnification used. The higher the magnification the less is visible on screen and the user has to scan around to find out where they are which can be cumbersome.

A partially sighted person will try and have a strategy to move through the page with magnification software. Usually they will start at the top left of the page and move as horizontally as possible to the right and then move down to other parts of the page trying to make sure that they have investigated the page entirely. Layout of the page becomes important as it is easy with high level of magnification to miss elements.

Some partially sighted people find certain colours easier to use and there are a series of pre-set colour schemes in both Windows and Mac OS that can be used. The most common ones are high contrast or invert as some people find it easier to read text that is light on dark because of the issue of brightness. If the page is light with dark text, then this can cause brightness or glare issues for people with certain eye conditions, making it difficult for them to read the text comfortably.

Big empty spaces

When magnification is enabled everything on screen is magnified and then spaces between elements and the text enlarge. If spaces between the text and elements such as buttons, is already big at normal size they will become even bigger when magnified. This will mean that a magnification user will pan around a lot before finding the button. The space might become so big that a partially sighted user might not find the button.

An example of where this issue could arise is in a form where the labels are too far from the edit fields or check boxes that they are associated with, meaning that with magnification it is easy to move from the label to the wrong associated element.

Make sure that elements are not positioned too far from associated text. and labels are not far from the associated form control. If elements need to be positioned far away. then the visual design of the page needs to make it clear where the user needs to go to find the button on the page.

Unhelpful visual Layout

It is easy with high levels of magnification to miss elements depending on their placement on the page as it becomes difficult to keep track of where you are on screen due to the lack of overview and it is also difficult to pan in a horizontal manner when using magnification.

Careful consideration needs to be taken when deciding where elements fit on the page. Making it easier to follow and pan to elements horizontally will make it easier to use the page.

Insufficient colour contrast

The WCAG guideline say that the text should stand out from the page and have a minimum colour contrast ratio of 4.5:1 with its background. This ratio has been quantified for people in their 80s with 50% residual vision, an acuity far above that of people with sight loss. This means the WCAG minimum ratio of 4.5:1 ratio for colour contrast for standard text is really a minimum and efforts should be made to strive for higher ratios. Care must be given to make sure that even text such as placeholder text provides a good colour contrast without looking as if it is inserted text.

Text is not the only thing that needs to be easy to see, all the other elements such as buttons or edit fields also need to stand out and be easy to find on the page. Other items that often are not clear to a partially sighted person are knowing if an item is selected or where the box for check box is.

Make sure the tonal contrast is good for people who cannot see colours as in this case, the relationship between the colours is more important than the individual colours themselves. Tonal contrast is the difference in light or dark between colours. Two colours may appear to be easy to distinguish if you have good colour vision, but they can have very little tonal difference (so when viewed in grey scale they look very similar).

If an inverted colour or high contrast scheme is applied the user must still be able to see the page in its entirety without any loss of functionality or meaning. This means that text and also buttons and other elements such as checkboxes or radio buttons need to stand out. Often the label for the element stands out but the outline for a check box is lost which causes a problem.

Text all in capital letters or italics

Many people read by identifying word shapes, and letters with descending and ascending parts – such as in a "p" or an "f" help with this. Effects such as italics and words in all capitals make it harder to recognise the shape and this will affect both partially sighted and dyslexic users. Underlining also affects the descenders making the word harder to recognise. Therefore, long blocks of text in italics, all capitals or underlined should be avoided. There are exceptions, for example, links are often underlined, and this helps people identify them as links, some words are standard in capitals such as OK or acronyms. Italics and capital letters can be used for emphasis as long as there are only a few words.

Words in all capital letters are often used to make the word larger and easier to see, but it is easier to have the word in mixed letters in a larger font and this takes up the same amount of space.

If capital letters are used to make the text stand out, it would be better to increase the font size and possibly make the text bold as this would be easier to read. But do not use capitals for large amounts of text, for example a sentence or very long header, as this can be difficult for some people to read easily.

Edinburgh   (14-point Arial mixed case)

EDINBURGH   (14-point Arial all in capitals)

Edinburgh   (18-point Arial mixed case) – preferred

Edinburgh   (18-point Arial mixed case bold) – preferred

Further information

**For further information please contact
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