Improving Travel Website Accessibility

Creating ‘all inclusive’ experiences for the travel and tourism sector

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Foreword

When people talk about “accessibility” in the travel sector, they often mean that the hotel allows for wheel chairs or some other physical aspect. However, it is just as important for the websites to be accessible as well.

Booking online is often the default now, and for some people with disabilities it might be the only option. For families or couples, it can be the responsibility of the person with a disability to spend time online working out the best option.

People with disabilities can and do go on many holidays that you might not expect including surfing in Cornwall, meeting elephants in Sri Lanka, and white water rafting in Canada.

Paying attention to web accessibility can increase customer satisfaction, generate revenue, improves brand loyalty and can even enhance search engine performance. It’s also a legal requirement under the Equality Act 2010, but how many travel companies recognise this potential?

By testing a cross section of travel sites we aim to highlight issues unique to the travel and tourism industry, and show where improvements could be made for the 11 million people in the UK with a registered disability.
Method - What we did

SELECTED SITES

We chose a selection of travel sites from a list of the top UK travel websites. We aimed for a spread of specific and general sites. For example, thetrainline.com is specifically for booking train tickets, but Expedia offers a wide range of holidays.
TESTING METHOD

For this research we used the W3C’s new Easy Checks, which aim to provide a preliminary review of a page’s accessibility. It does not aim to find every possible accessibility issue, but if issues are found, you can be confident that people with disabilities will be affected by the issues identified. They have been selected as obvious aspects to get right.

We reviewed the homepage and the subsequent page of our sample websites, considering how to make a booking, or search for something to book. For example, the search results page of Jet2.com after using the form on the homepage.

Focusing on the core-tasks enabled us to be sure that the issues found will affect a high number of visitors.
TESTING CRITERIA

The W3C’s Easy Checks cover the basics of web accessibility:

Page title

Check that there is a title that adequately and briefly describes the content of the page, and that it distinguishes the page from others.

Alternative text

Every image has appropriate description associated.

Headings

There should be headings (e.g. <h1>) for pages with substantial content, and the hierarchy of those headings should indicate how the page is structured.

Colour contrast

Text should have a minimum contrast ratio with the background of 4.5 : 1, or 3.5 : 1 for text over 14px bold, or 18px regular.

Resize text

When you increase the size of text to 200% (through either zoom or text-size) text should not get cut-off, overlap, or be wider than the browser view.
Keyboard access

Check that you can tab to all the elements, including links, form fields, buttons, and media player controls.

Visible keyboard focus

Check that the focus is clearly visible as you tab through the elements, that is, you can tell which element has focus, e.g., links have a grey outline.

Forms

Form controls should be keyboard accessible and properly labelled.

Multimedia

Video and audio should have suitable alternatives, such as transcripts and captions.

If you are interested please read the W3C’s Easy Checks in full.

RELATED LINKS:

“What are Transcripts” by Léonie Watson: www.nomensa.com/blog/2010/what-are-transcripts/

“What are captions” by Léonie Watson: www.nomensa.com/blog/2010/what-are-captions/

“Easy Checks” from W3C: www.w3.org/WAI/eval/preliminary
Who does web accessibility affect?

Whilst it is not possible to say that any particular accessibility guideline only applies to a group of people, we have given examples of which apply more to certain groups.

**MOTOR IMPAIRMENTS**

Any site which removes the visible focus when tabbing through the page is going to affect people who can see the screen but not use a mouse. That is generally people with motor impairments; from hand-tremors due to Parkinson’s, to quadriplegia where a switch mechanism might be required. Stephen Hawkins is probably the most famous switch-user, his computer automatically runs through all the options on screen, and he twitches a muscle in his cheek to select something.

If it doesn’t work with a keyboard, it doesn’t work. If you cannot see where the focus is, you cannot select anything.

**RELATED LINKS:**

“iOS 7 Switch Control” from Ablenet: www.youtube.com/watch?v=fqWkNxB27DM#t=212

Switch access is available in several operating systems, including iOS7.
**MILD/MODERATE VISUAL IMPAIRMENTS**

If your vision is not 20/20, you may need to make things on screen bigger, using the browser controls to zoom-in or increase the text size.

A moderate visual impairment makes small text with little contrast difficult to read (simulated above).

Many sites fall apart or cut-off content if you increase the text size. Good contrast of colours will also help, as low-contrast text might be unreadable.
SEVERE VISUAL IMPAIRMENT

If you cannot see the screen, then you need to use a screenreader with voice or Braille output. These applications enable extensive use of standard computers, historically using Windows but Mac OS X and iOS also have popular screenreaders included by default. Screenreaders are very reliant on good coding practices, as they use meta-data in the code to understand the content and interactions.

Most of the W3C’s Easy Checks are relevant to screen readers: Page titles are read out when you land on the page, headings enable within-page navigation, keyboard access is fundamental, and multimedia needs alternatives.

Many sites look good, but do not have the structure underneath to create an equivalent experience for screenreader users. Good practice ensures both are considered.

Audio and tactile output work with regular computers and mobile devices.
AUDITORY IMPAIRMENT

For people who are hard of hearing or deaf, the obvious check is for multimedia: does a video have captions? When assessing the travel websites, we did not come across much use of video, limiting the affect it has on this audience.

NB: People who have been deaf since birth often have second-language issues, where English is a second language after Sign Language. However, none of the Easy Checks cover this aspect.

COGNITIVE IMPAIRMENTS

Cognitive impairments cover an incredibly wide range of issues, from dyslexia to severe learning disabilities. The range of different issues makes it very hard to give concrete guidelines for design. None of the Easy Checks (and few of the full set of accessibility guidelines) help people with cognitive impairments.

However, a site you have made accessible and usable will generally be better for people with cognitive impairments.
Results - What did we find?

The overall results were poor in terms of sites that “Pass” all the Easy Checks. None of the sites passed all, or even most of the checks completely. However, just talking about pass rate would be misleading.

Having done lots of usability-testing with people who have disabilities, some issues are more likely to affect people in real life and we think it is important to prioritise on that basis.

Therefore we’ve looked at where the issues occur. If they affect core functionality (e.g. booking a holiday), that is a real problem. If the site happens to miss a heading within the footer of the page, that is much less of an issue.

The listing of results for each site can be found in the appendix (see page 34).
PAGE TITLES

The test was: Check that there is a title that adequately and briefly describes the content of the page, and that it distinguishes the page from others. Most of the sites were reasonable, for example Sky Scanner has: Skyscanner - Compare Cheap Flights, Hotels & Car Hire.

We did find a heavy influence from Search Engine Optimisation (SEO), where the name of a site such as Jet2 would be last in the page title: Cheap Flights | Find & Book Cheap Flights Online | Jet2.com. This was not counted as a fail as it does say what the site is. However, for usability reasons we would generally recommend putting the company name first on the homepage. For example, if you remember that P&O had a good holiday, it helps that their homepage includes their name first.

When browsers show the first part of a page title, having the company name first (for the homepage) can help recognition.

RELATED LINKS:

“How to write better page titles” by Gosia Mlynarczyk:
http://www.nomensa.com/blog/2013/how-to-write-better-page-titles/
ALTERNATIVE TEXT

All images should have ‘alternative text’ (alt text) so they can be understood even if you cannot see them. Alt text is perhaps the most basic and widely understood accessibility issue. Few of the sites completely missed alt text, but it did pose some problems.

If the image is not important to the task at hand then missing alt text is an annoyance rather than a barrier. However, if the primary means of finding the booking number is in an image, you have a problem.

An image that shows text must include it in the alternative.

The image above shows an example of a missed opportunity; unless the phone number is obvious in other places, this would cause loss of sales.
MISLEADING OFFERS

A very common issue across the sites was misleading alt text on special offers. Many of the sites showed special offers in large banner images, but the alt text was often insufficient, or even misleading. This was not counted as a blocker to the core task for the purpose of this research, but in general terms it would be a critical issue for people who are blind.

Anyone using a screenreader will miss important information about the special offers.

Again, the alt text here prevents the screenreader user from discovering the full information given in the image. In this case it might mean the user goes to a travel site that does provide the information on offers available.

For more on how to write alt text, visit our URL to the left.

RELATED LINKS:

“This isn’t just alt text; this is really great alt text” by Léonie Watson:
www.nomensa.com/blog/2006/this-isnt-just-alt-text-this-is-really-great-alt-text/
KEYBOARD FOCUS

For people who need to use the keyboard (or a similar device) and can see, the focus indicator is vital. It is easy to try yourself, open up a web page and press the tab key. You should see an outline appear around the link or form control that is in focus.

On several of the sites we looked at, just one line of code in a style sheet is preventing people from seeing where their focus is. It is quite difficult to show a lack of something, so the location of keyboard focus is circled in the example below.
You cannot expect people to rely on the status bar to show them where the keyboard focus is because form controls do not display anything in the status bar, so anyone looking at the screen and using the keyboard will find it impossible to navigate.

The focus indicator is actually something all browsers provide naturally, unless the site removes it. Some popular frameworks include a “reset” style sheet, which includes one line of code that takes away the focus:

```javascript
*:focus {outline: 0;}
```

The URL to our blog on the left has more on why focus styles are important.

**RELATED LINKS:**

*Why focus styles are important* by Kate Bradbury:  
www.nomensa.com/blog/2013/why-the-focus-indicator-is-important/
KEYBOARD INTERACTIONS

Most of the sites were usable with a keyboard, assuming you do not need to see the focus indicator. The issues we found were generally due to making the search/booking forms as slick as possible, while not catering for everyone.

For example, choosing a date can be tiresome if you have to type all the numbers in, so most sites provide a handy calendar feature.

Calendar pop-ups are useful so long as you don’t disable keyboard access as well.

In the example above you cannot tab to the calendar. That alone would not be a critical problem, except that the script disables keyboard entry into the field as well, so you cannot even type in a date. Therefore anyone who cannot use a mouse cannot book, resulting in a loss of revenue for the provider.
EXCESSIVE LINKS

Another type of problem we found on several sites was where a lot of tabbing was needed. There is no hard limit on how many links or controls you can have on a page, but if you consider that a results listings with filters can have almost 300 links and 100 form controls, that is a lot of tabbing. Even an avid gamer would struggle with that much tapping!

If all those links were necessary to the functioning of the page, that might be justified, however:

- Almost 70 are links at the bottom of the page, purely for SEO purposes (section 4, left).
- Each listing item has two links that go to the same page (50 per page, section 1).
- Only 40 of the form controls are visible, the off-screen controls should be hidden from the tab-order as well.
- The navigation that appears at the top of the page is actually at the bottom (in the code), which means you have to tab through everything on the page to get to the navigation.

Removing the links mentioned above would make the page a more manageable 220 links and form controls. However, it would still be very helpful for keyboard users to be able to access different parts of the page directly. For this type of page we would recommend:

- Skip links at the top of the page, for example to the filters and main navigation.
- ARIA landmarks as a quicker way to find sections of the page for some users.
- Good heading structure so that screenreaders can skip between headings.

RELATED LINKS:

“What are Skip Links” by Emily Coward: www.nomensa.com/blog/2004/what-are-skip-links/


CONTRAST

People with a variety of vision impairments need good contrast on text to be able to read it. In a testing session with a user with a moderate visual impairment, the user moused-over a link which went bright-pink (on white). It was very clear to the facilitator, but the user asked where the link had gone.

Simulating a mild visual impairment to highlight the difference orange colour makes for “Price”.

The check for contrast is that it is has a luminosity ratio of 4.5:1. That does not mean much to the average person, but there are tools that you can use to test colours such as the colour contrast analyser.

RELATED LINKS:
“Colour Contrast Analyser” from The Paciello Group:
www.paciellogroup.com/resources/contrastAnalyser
Improving travel website accessibility / Results - What did we find?

Checking for colour contrast is quite easy, select each foreground and background colour from the page.

The check for contrast is that it is has a luminosity ratio of 4.5:1. That does not mean much to the average person, but there are tools that you can use to test colours such as the colour contrast analyser.
Most of the travel sites had good contrast, but one has a “brand” colour scheme with a lot of orange and white, a low contrast combination.

In cases where the business is determined to use a low-contrast colour scheme (or you are catering to an audience likely to have visual impairments) it is advisable to supply alternative colour schemes. For example, Sky’s accessibility site includes buttons to change the colour scheme of the whole site.

RELATED LINKS:
“Sky Accessibility” from bskyb:
www.accessibility.sky.com

A colour scheme choice can be necessary if you cannot meet the contrast guideline by default.
TEXT SIZING

Currently, there are two main methods to allow for increased text size in the browser:

- Responsive web design, where the layout adapts to the available space. This method works very effectively with the ‘zoom’ feature built into all desktop browsers.

- Avoiding fixed widths/heights to enable text (only) to increase in size. This method works best for fixed-layout sites, with care and testing.

None of the sites we looked at used a fully responsive design, so using the browser’s zoom created a lot of horizontal scrolling in most sites. Also, over half the sites hid content or functionality when the text-size was increased.

Increasing the text size hides the “Show cruises” submit button, and the main navigation images do not change.

There are lots of people that would benefit from the sites being more flexible, and ideally responsive. Not only people who need to increase the size of text and images, but anyone using smaller screen devices such as tablets.
Conclusions - Final thoughts

Three sites stood out for having very few barriers for their core tasks: Train Line, Expedia and Sky Scanner. For all the other sites there would be significant barriers for one or more groups of people with disabilities.

There were a few common and critical barriers that we found:

- Prevented keyboard users from entering data into forms, which would prevent several groups from searching or booking.

- Removing the visual indicator for the keyboard focus, so people using keyboard-style access (e.g. a switch for mobility impairment) would not be able to see where they are.

- Cutting off content when text size is increased, so people with moderate visual impairments would struggle to read them.

- Inaccurate or misleading alternative text for images, so people using screen readers would miss special offers or phone numbers.
Most of the sites had a variety of other barriers, so although there are some common issues there is a great deal of variety in the sector.

The techniques for accessibility widen the range of technology that sites will work with.

With the recent trend of responsive design, it was interesting that seven of the travel sites have mobile-optimised versions when opened on a phone, but none used responsive design. Responsive design (even when you have a mobile version as well) helps with accessibility, but it also helps with the variety of devices. There are a multitude of devices proliferating, from televisions, to various tablet sizes, to watches. There are no set sizes to design for anymore, so using responsive design helps to deal with the variety.
NEXT STEPS

In most cases the changes needed would be in the code of the pages, so all it takes is some knowledge and motivation to improve the situation. The plan of action to remove accessibility barriers could be:

i. Conduct a full audit of several representative pages to establish all the barriers. This would provide a more thorough review of the accessibility barriers found across the whole site. The results should include a customised action plan to solve the issues and improve the experience for people with disabilities;

ii. Conduct usability testing with people who have disabilities. This helps to prioritise which issues affect real people the most, and can be very persuasive for the development team and other stakeholders in the organisation. When you see real people having issues with your site, working to remove those barriers is very natural;

iii. Roll-out updates to the site that resolve the issues;

iv. Conduct regular checks or testing on an ongoing basis. Once the initial work is done and accessibility knowledge established, the ongoing checks can be lightweight and even integrated with your Quality Assurance process.

Accessibility is very like usability, a little knowledge and testing go a long way. Doing regular accessibility testing ensures that high standards are maintained, and putting accessibility high on your organisation’s agenda can increase customer satisfaction, generate more revenue, improve brand loyalty and give you a competitive advantage.
About Nomensa

Our unique approach to the work we undertake, draws on our extensive experience in psychology, information architecture, interaction design and technology. We drive commercial value for our clients creating online experiences that engage and delight the people they touch.

We’ve placed accessibility at the core of our business for more than a decade. We’re trusted by our clients, respected by our contemporaries, and recognised for our contribution to the accessibility profession.

As a W3C member we contribute to the guidelines and standards used throughout the industry. Our participation in the Web Content Accessibility Guidelines and Authoring Tool Accessibility Guidelines working groups puts us at the cutting edge of accessible standards development.

Our client portfolio includes many well known organisations that place their trust in us to help them protect against accessibility risk, and maximise their accessibility potential. Lloyds TSB, P&G, Samsung, Macmillan Cancer Support, Gov.uk and Sky are just a few of the organisations we work with.
About the author: Alastair Campbell

In 2001 Alastair helped establish Nomensa, and as Director of Accessibility and a user experience practitioner he works tirelessly on exciting new research and development projects to continually discover new methods and innovations to help people get the most out of online technology.

With a background in psychology and an expert in human–computer interaction, Alastair is driven by a desire to make the digital world accessible through the best possible user experience.
Appendix - Travel sites accessibility research

ACCESSIBILITY RATING

The overall results were very poor in terms of sites that “Pass” all the checks. None of the sites passed all, or even most of the W3C’s Easy Checks completely. However, just talking about pass rate would be misleading.

Having done lots of usability-testing with people who have disabilities, some issues are more likely to affect people in real life and we think it is important to prioritise on that basis.

Therefore we’ve looked at where the issues occur. If they affect core functionality (e.g. booking a holiday), that is a real problem. If the site happens to miss a heading within the footer of the page, that is much less of an issue.
SCORING

To differentiate between critical and less critical barriers, we chose two levels:

Blocker: For major barriers which block people from completing the core task, we scored 2. For example, making the keyboard focus indicator invisible is a complete blocker for people using switch access, or where increasing the text-size moves a key feature out of sight.

Poor: For barriers which make it harder but do not necessarily block task completion, we scored 1. For example, poor heading structure would make the pages confusing for a screenreader user, but do not necessarily block access completely.

This is a subjective measure, but one based on real accessibility issues for a particular task. It is also focused on a very specific path from the homepage to one subsequent page, so there could be other issues in the pages not reported here.

<table>
<thead>
<tr>
<th>SCORE</th>
<th>BARRIERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Poor keyboard focus and headings.</td>
</tr>
<tr>
<td>1</td>
<td>Poor response to text-sizing.</td>
</tr>
<tr>
<td>9</td>
<td>Invisible keyboard focus, keyboard accessibility issues, poor headings, text-sizing removes submit button, poor contrast.</td>
</tr>
<tr>
<td>6</td>
<td>Invisible keyboard focus in places, keyboard accessibility issues, and poor headings.</td>
</tr>
<tr>
<td>4</td>
<td>Submit button disappears when text-size increased, poor focus indicator and contrast.</td>
</tr>
<tr>
<td>3</td>
<td>Poor headings, text-sizing and structure.</td>
</tr>
<tr>
<td>5</td>
<td>Missing important alt texts, invisible focus indicator, poor text-size response.</td>
</tr>
<tr>
<td>4</td>
<td>Duplicate / misleading alt text, poor headings and text-sizing.</td>
</tr>
<tr>
<td>1</td>
<td>Poor contrast link text.</td>
</tr>
<tr>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Missing alt texts, no keyboard focus, keyboard accessibility issues, poor headings and contrast.</td>
</tr>
<tr>
<td>5</td>
<td>Invisible focus indicator, poor headings, structure and text-size response.</td>
</tr>
</tbody>
</table>