

APPNOVATION

*An Appnovation Digital eBook*



Design  
for Diversity  
**The Importance of  
the User Experience**  
...for everyone.

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**APPNOVATION**

Thank you for downloading our E-Book:

**Design for Diversity  
The Importance of the User Experience  
...for everyone.**

We hope you learn a lot from our free resource.

If you have any questions, please do not hesitate to contact us online or in person at any of our offices around the world.

We look forward to hearing from you soon!

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# The Problem, and why it matters...



## Chapter 1: The problem, and why it matters...

# If website accessibility is on your mind, YOU ARE NOT ALONE

Within the well-worn pages of this eBook, we'll be taking an in-depth look into one of the hot topics in the Drupal community, as well as the wider world of open technologies: website accessibility.

Just a few of the questions that arise, and that we will be delving into include:

- What is website accessibility?
- Why does it matter?
- What are companies and developers doing to achieve it?
- Are there minimum industry standards?
- Is Drupal leading or following?
- Can universal website accessibility really be achieved?

As a digital solutions provider, and expert open source development company, Appnovation is always looking to lead rather than follow...but that does not mean there is no room for improvement when it comes to Drupal website accessibility issues, both on our own online destination, and for many websites across the internet.

It's something that is, quite rightly, under the spotlight more than ever before, as internet users with disabilities look to enjoy the same quality of online experience afforded to everyone else.

As it should be.

Being perfect, at least in the short-term sense, is not the immediate goal, (love that as we would) but always aiming for the most accessible website possible most certainly is.

So, let's start with the basics...

## Basic Accessibility Tips

It's fairly common knowledge that, when building new premises, be it a library or an office tower, a courthouse or a department store, making it accessible to those with disabilities is something that is, or should be, incorporated into the plans, right from the first blueprint.

In the case of older establishments, it's fair to say that improving accessibility is one of the most common reasons for renovations or alterations.

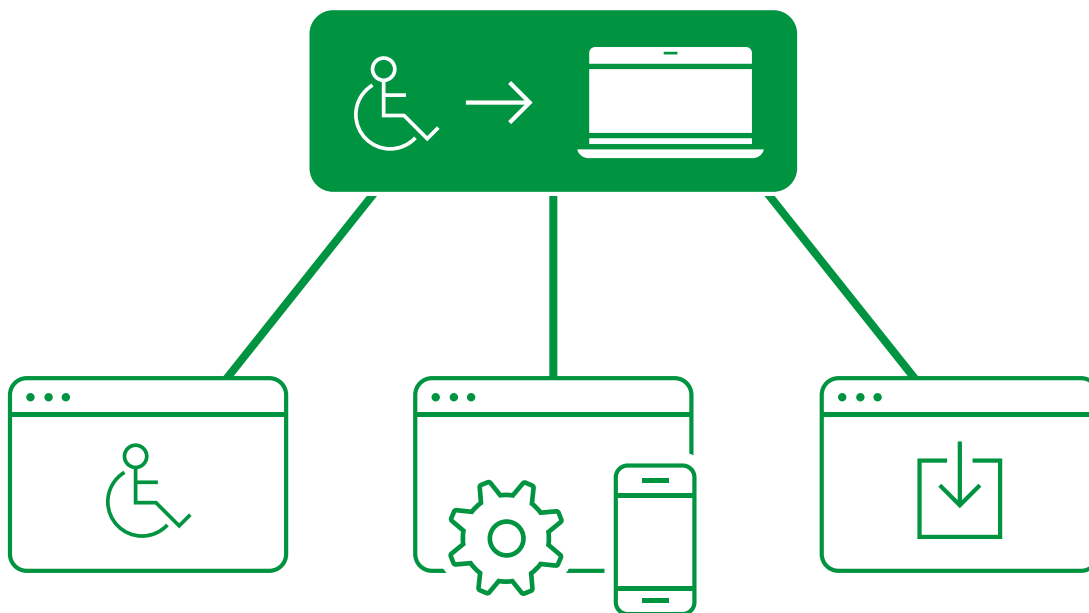
Put simply, as a company, we believe a physical disability should not stop a person's digital odyssey, or affect their right to online services, and that is exactly the issue at hand...and website designers are sitting up and taking notice.

By way of an example, consider the case of a visually impaired user:

If a site is coded with semantically meaningful HTML, with textual equivalents provided for images, and with links named meaningfully, this helps blind users using text-to-speech software and/or text-to-Braille hardware.

It seems simple, intuitive, elementary...but there are instances where these, and other basic elements of usability and accessibility are neither implemented nor evident.

In general terms, 'web accessibility' refers to the inclusive practice of removing barriers that prevent interaction with, or access to websites, by people with disabilities.





When sites are correctly designed, developed and edited, all users have equal access to information and functionality, with specific consideration being given to the following:

## **VISUAL**

Visual impairments (including blindness, various common types of low vision and poor eyesight, various types of color blindness)

## **MOTOR/ MOBILITY**

Examples of this include: difficulty or inability to use the hands, including tremors, muscle slowness, loss of fine muscle control, etc., due to conditions such as Parkinson's Disease, muscular dystrophy, cerebral palsy, stroke.

## **AUDITORY**

Deafness or hearing impairments, including individuals who are hard of hearing.

## **SEIZURES**

Photo epileptic seizures caused by visual strobe or flashing effects.

## **COGNITIVE/ INTELLECTUAL**

Developmental disabilities, learning disabilities (dyslexia, dyscalculia, etc.), and cognitive disabilities of various origins, affecting memory, attention, developmental "maturity," problem-solving and logic skills, etc.

# Prioritizing Accessibility Elements

## Chapter 2: Prioritizing Accessibility Elements

As the Web Accessibility Directive clearly shows, the list of priorities is vast, but it also has a gradation system of 1-3, in order of most critical, to most desirable.

This, effectively, attempts to guide developers and their developers, and outline the most critical accessibility features and functions, without which the site would not even achieve the most basic standards of accessibility.

Imagine that the same level of accessibility directives and considerations for constructing an office space were used when building a website...and consider that it is just as important to be virtually accessible, as it is to be physically.

Appnovation is actively working with clients to achieve drupal website accessibility (as well as constantly looking to improve our own site).





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Clients such as the University of Phoenix(<http://www.phoenix.edu/>), are looking at ADA website accessibility compliance (ADA, Americans With Disabilities Act, 2010, Standards for Accessible Design). Changes and improvements on their site, for example, include:

## Images

(i.e. seeing how images are being displayed--dynamically, through controlled content or hard-coded and ensuring alt text is included).

## Headers

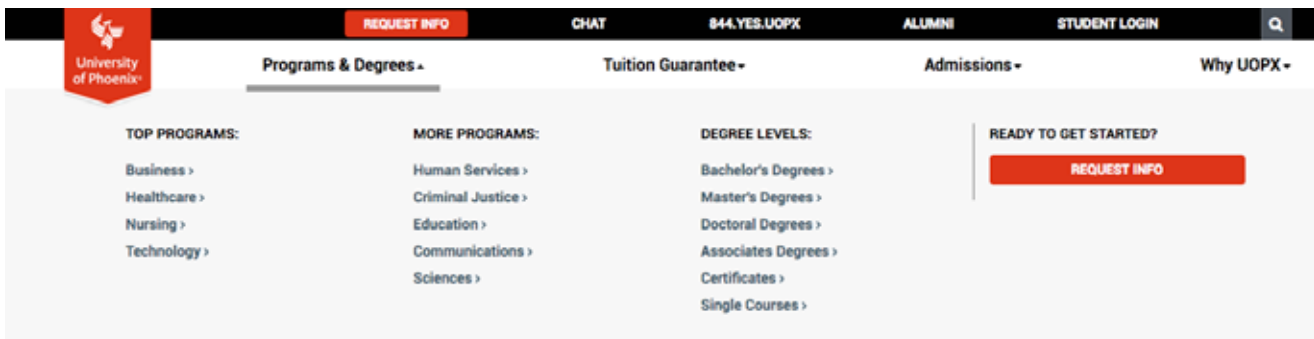
(i.e. H1, H2 tags, etc. in the page mark-up, ensuring they were set up properly)

## Navigation

Tabbing through content, left to right, top to bottom



University of Phoenix Website



Navigation menu designed for the Website

## Visual contrasts

An example of this was the calendar page, previous months and those had a grey background and text to indicate it was in the past...the contrast had to be increased between the background and text to meet compliance standards.



As design and development continue to incorporate accessibility features, either as standard, or in terms of retroactive improvements, more companies, institutions and organizations are looking into website accessibility compliance.

Another example of drupal website accessibility in action, is another of our clients, the University of California. As Appnovation was responsible for both the design and implementation, the designs had web accessibility and screen-reader considerations incorporated up front, another reason for selecting Drupal.

During the design stage, University of California (<https://www.universityofcalifornia.edu/>) stakeholders were already performing contrast testing on the design mock-ups to ensure the development and implementation would comply with WCAG 2.0 guidelines as proactively and smoothly as possible.

Not all companies are as proactive, however, and with the frequent failure of companies to ensure that their websites are accessible for those with disabilities, this new development consideration is more important than ever, and Drupal is leading the open technologies charge.

Naturally, very few sites are perfect in this regard, ours included, and there are always improvements that can be made, as technology enhances our ability to deliver upgraded accessibility, but simple checklists, such as the one below, should always be front and centre:



University of California Website

## Web Content Accessibility Checklist

### ✓ Perceivable

Provide text alternatives for non-text content

Provide captions and alternatives for audio and video content

Make content adaptable; and make it available to assistive technologies

Use sufficient contrast to make things easy to see and hear

### ✓ Operable

Make all functionality keyboard accessible

Give user enough time to read and use content

Do not use content that causes seizures

Help users navigate and find content

### ✓ Understandable

Make text readable and understandable

Make content appear and operate in predictable ways

Help users avoid and correct mistakes

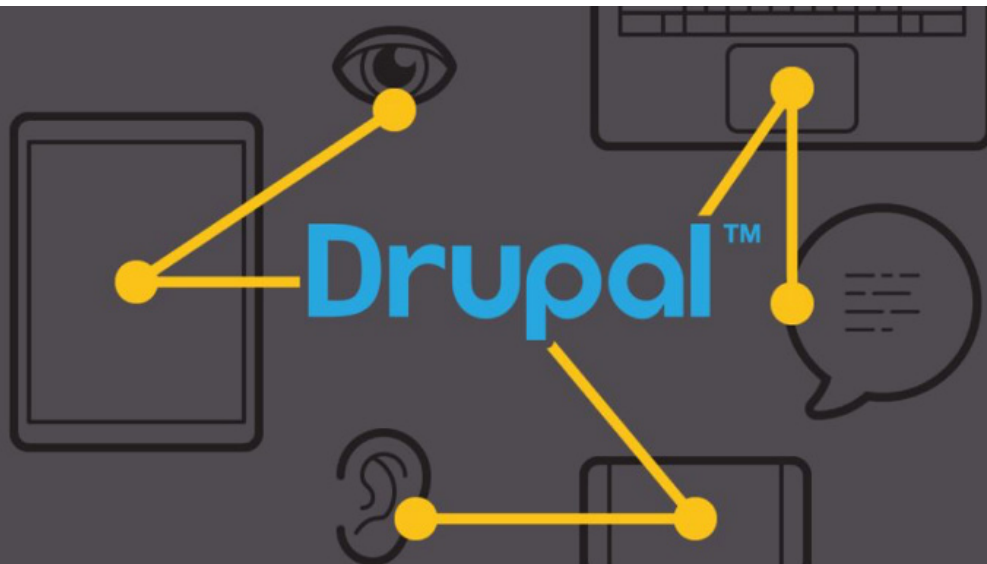
Ultimately, various acts across the US, and globally, are being brought into law to ensure that all sites, both desktop and mobile, are attaining a decent standard of web accessibility as a matter of course, making this an essential part of the development, rather than a casual, post-launch afterthought.

This is important to the Drupal community, which makes website accessibility such a critical part of why people would choose Drupal to start with.

Appnovation's research team and, ultimately, our developers always see development as a process, leading to an optimized user experience, regardless of who that user may be.

# Drupal and Accessibility Features

## Chapter 3: Drupal and Accessibility Features



As we discussed in Chapter 2 of our book, web accessibility refers to the inclusive practice of removing barriers that prevent interaction with, or access to websites, by people with disabilities, and there are many different elements which contribute to how your site performs, and what the priorities need to be.

When sites are correctly designed, developed and edited, all users have equal access to information and functionality.

Put simply, design for diversity, deliver for everyone.



That's the plan. That's the goal.

At Appnovation, as our recent proposal commitment shows, we will always commit to minimum requirements, but we will also strive to achieve much more...

### Accessibility

Default level of Accessibility has been set for AA but Appnovation will strive to do better in areas where we can.

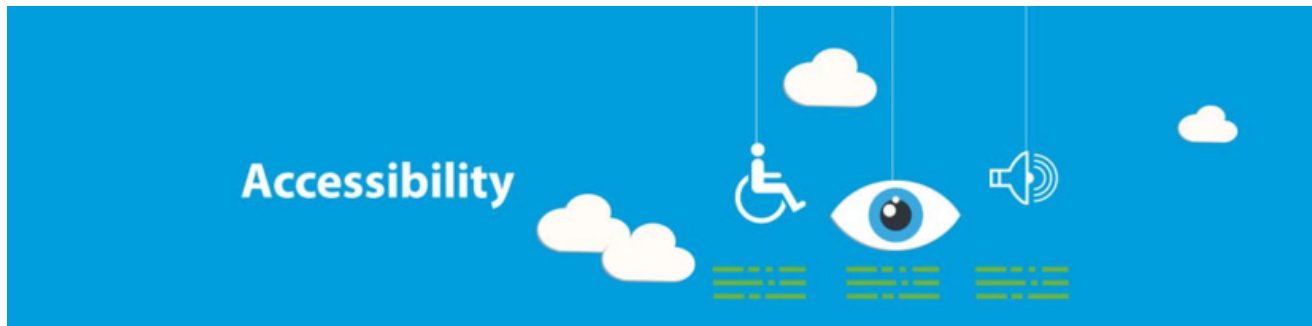
#### Conclusion

Appnovation to build the new FTSE Russell site/ Client portal and Support portal, using WCAG AA standards but will aim for higher where we can.

As this eBook is highlighting, Drupal website accessibility is something about which our Appnovation team is acutely aware, and actively working on, something that is inseparable from our scope of work for clients.

Whenever we audit and evaluate the features of our own site, we look to immediately remove any identified accessibility barriers, and are just as vigilant in terms of client sites, including Drupal website accessibility considerations from the start.





Even after the initial launch, or relaunch of a client site, we are also aware that ongoing support and maintenance is important for our clients, which is why we offer packages to ensure ongoing accessibility needs are met.

When developing a new site, it is advisable to incorporate accessibility into the initial planning.

That said, companies with existing or older website designs have to address accessibility issues retrospectively (as we all do, as accessibility functionality improves), so they have their site audited to deliver suggested alterations.

Many of the audit results depend on the CMS, which plays a major part in how accessible a site is or can become.

Having researched the most recent website accessibility audit surveys, I have discovered that the most common elements that required immediate alteration were:

- Heading Structure
- Visible Focus
- Alternative Text for Images
- Colour Contrast
- Skip Link
- Keyboard Traps
- Carousels and Slideshows: no controls
- Forms
- Captcha

And here are some explanatory examples...

## Accessibility Checklist

- ✓ Make link text contextual
- ✓ Add an alt text on images
- ✓ Check for colour contrast
- ✓ Test your tables
- ✓ Test using the Wave toolbar
- ✓ Use the Drupal Accessibility Checklist

Specifically, in terms of Drupal development, there is an ongoing focus on website accessibility, making it one of the more recommended platforms for those looking to upgrade or build in accessibility.

For example, the Drupal community contributors are continually rolling out accessibility improvements (to both the visitor and administrator sides) including:

- Search Engine Form and Presentation
- Drag and Drop Functionality
- Colour Contrast and Intensity
- Adding Skip Navigation to Core Themes
- Image Handling
- Form Labeling
- Removing Duplicate or Null Tags

Ongoing alterations are not just important in terms of user experience for those with disabilities, they are an important part of determining the most efficient CMS. Drupal is clearly committed to website accessibility, as shown by their own site's acknowledgement:

"As an inclusive community, we are committed to making sure that Drupal is an accessible tool for building websites that can also be accessed by people with disabilities"

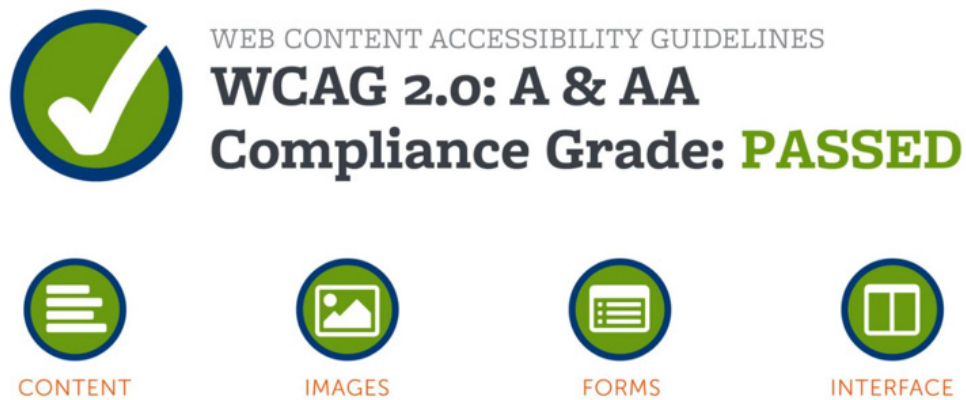
In many ways, this quote could be used for the platform on which to base any audit, and the springboard from which to address necessary alterations.

Any audit-recommended alterations should, of course, be done to ensure that the correct standards are met, as outlined on WCAG 2.0 and ATAG 2.0. with all elements of the site considered...





So, how important is an audit, if you feel your company site is not meeting accessibility standards? Well, consider the fact that this is your digital destination, which can be reviewed by users just like a hotel on Trip Advisor, and what people think matters.

When we completed our projects with the University of California and the University of Phoenix, an extensive part of our QA was ensuring that web accessibility was on point, and any reviews would be favourable.

But, more than this, website developers should care about the UX, not as an afterthought, but as an intrinsic part of what users will need to enjoy a full, unencumbered experience, from homepage to checkout, from browsing to booking.



WEB CONTENT ACCESSIBILITY GUIDELINES  
**WCAG 2.0: A & AA**  
**Compliance Grade: PASSED**

 CONTENT       IMAGES       FORMS       INTERFACE

The graphic features a large green checkmark icon in a blue circle on the left. To its right, the text 'WEB CONTENT ACCESSIBILITY GUIDELINES' is in a small, grey, sans-serif font. Below that, 'WCAG 2.0: A & AA' is in a large, bold, black font, and 'Compliance Grade: PASSED' is in a large, bold, green font. At the bottom, there are four circular icons in a row, each with a label below it: 'CONTENT' (list icon), 'IMAGES' (image icon), 'FORMS' (form icon), and 'INTERFACE' (grid icon). All icons are green with a blue border.

And, if you do want your site to be audited, and are willing to implement any and all suggested changes, that will enable you to set new standards for your own digital experience, and that of all your users.



Atom File Edit View Selection Find Packages Window Help

Project

minecraftPeServersApp  
└─ \_tests\_  
└─ .git  
└─ android  
└─ app  
 └─ assets  
 └─ components  
 └─ config  
 └─ screens  
 └─ About.js  
 └─ Favorites.js  
 └─ FilterServers.js  
 └─ News.js  
 └─ Server.js  
 └─ Servers.js  
 └─ Submit.js  
 └─ Tutorial.js  
 └─ utilities  
 └─ .DS\_Store  
 └─ Index.js  
└─ ios  
└─ node\_modules  
└─ PSD

Servers.js Server.js globals.js Submit.js

```
1 import React, { Component } from 'react';
2 import {
3   TouchableHighlight,
4   RefreshControl,
5   Platform,
6   AppState
7 } from 'react-native';
8 import { Toast, Card, CardItem, Container
9 import { Col, Grid } from 'react-native-e
10 import Icon from 'react-native-vector-ico
11 var _ = require('lodash');
12 import firebase from 'react-native-firba
13
14 import ServerComp from '../components/Se
15 import Data from '../utilities/Data';
16 import Cache from '../utilities/Cache';
17
18 /* Admob */
19 const advert = firebase.admob().interst
20 const AdRequest = firebase.admob.AdRequ
21 const request = new AdRequest();
22
23 export default class Servers extends Co
24   constructor(props) {
```

app/screens/Servers.js 18:12 LF UTF-8 Java



# 4 To Fix or Not to Fix...



## **Chapter 4: To Fix or Not to Fix...**

To fix or not to fix, that is the question.... if you don't mind my shameless misappropriation of the famous Shakespearean quandary.

It may seem like a somewhat simple question, but it is a more serious consideration for most companies. As the earlier blogs in our website accessibility series highlight, this is not just a passing topic, but an ongoing concern for website development and developers.

Imagine that you are buying a house, with critical accessibility needs for one of the residents: do you make the necessary changes to the home, which you may like enough to consider, or do you build a home with such considerations in the blue-print?

This is, on a virtual level, the same dilemma

Whether it is costing or branding, there may be a plethora of reasons why a business may agonize over updating or recreating their website, with advantages to be considered in both cases.

Sometimes, starting from scratch, building and developing from the ground up seems like the preferable option, ensuring that website accessibility elements are seamlessly merged into the foundations of the site.

But it's not as simple as that, evidenced by the fact that some companies prefer to repair rather than rebuild.

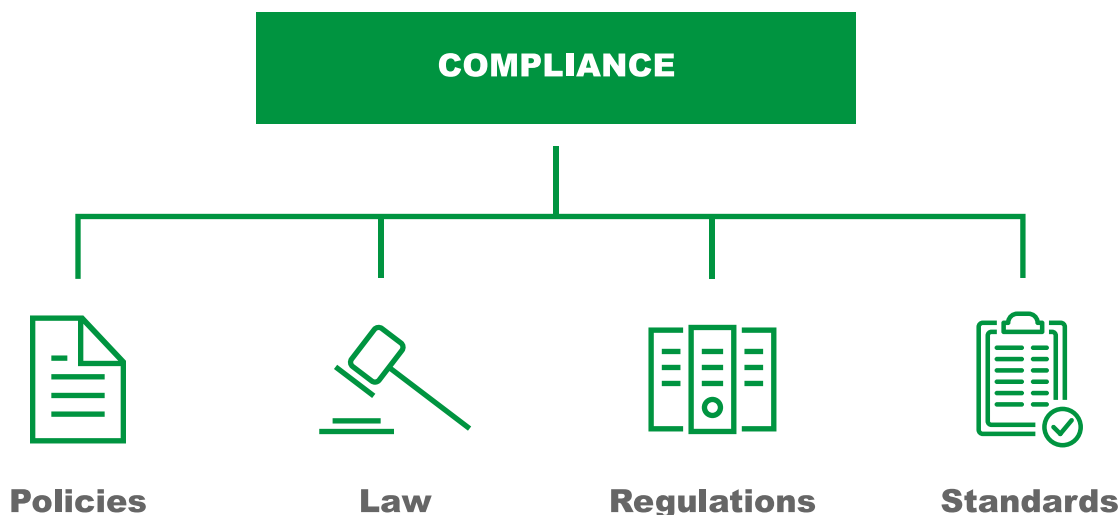
Well, think of it simply: if you must meet with a specified criteria, does that make your replace or rebuild decision any simpler...

Here are the basics before you decide on remediation, or a shiny new site:

- You **MUST** ensure your website design follows a consistent navigation scheme across all pages, and that the menus or other navigation mechanisms are located in the same place
- You **MUST** provide a page title that describes the topic or purpose of the page
- You **MUST** provide structural headers to convey the structure of your page.
- You **MUST** provide a text based equivalent if non-text web content is integral to understanding the editorial content (video, audio etc.).
- You **MUST** ensure that all functionality is available using the keyboard alone

Also key to remember, is that there are minimum standards, additional requirements and the more desired level of website accessibility features.

So, will repairing your existing site merely meet the minimum, and potentially mean constant redevelopment, or will it be more fiscally sound to start from the ground up?



In the case of two of our clients, the University of Phoenix and University of California, it boiled down to how far from the desired accessibility their sites were.

Clearly, these elements alone provide a development dilemma, which is what Drupal.org has become so proactive with website accessibility compliance.

Drupal 7 was designed to support the development of sites that comply with WCAG 2.0 and ATAG 2.0, and the Drupal accessibility community is deeply involved in adopting best practices in Drupal 8, both in the first instance and as they evolve.

For example, within Drupal.org, the accessibility team continues to identify, and work on improving accessibility barriers, resolving them swiftly and committing the improvements.

Having identified and resolved a number of issues in the core code of Drupal 7, the Drupal community have raised website accessibility awareness, both within and beyond their own development community.



They have even added some additional support for Rich Internet Applications, by adding some WAI-ARIA support.

There have been many improvements to both the visitor and administrator sides of Drupal, denoting the commitment to website accessibility, especially:

- Search engine form and presentation
- Drag and Drop functionality
- Color contrast and intensity
- Adding skip navigation to core themes
- Image handling
- Form labeling
- Removing duplicate or null tags

Again, though there is no 'one size fits all' solution when deciding whether to repair or rebuild your website, these considerations must be factored in.

Ultimately, there will only ever be two options in terms of meeting website accessibility standards: repair and renovate your existing online furniture, or get a whole new design, and release a whole new website.



# 5 Conclusion

## Conclusion

As I mentioned earlier, the simple rule for delivering accessible websites for all users can be summarized in three words: Design for Diversity. Starting a website design phase and process with this in mind, can ensure that you never lose sight of what your online portal needs to deliver, and how best to deliver that to users of all abilities.

Disability should never be a hurdle to an excellent online experience, and as website accessibility becomes ever more discussed, this is, thankfully, being more widely appreciated.

Thanks to the work of both Drupal developers, as well as those working within other platforms, website accessibility is no longer an afterthought, but a guiding principle remaining constant throughout the design and development process.

If you are looking to build a website, contact our Drupal experts, who are always ready to guide you through the process, and ensure that your website accessibility standards are up to scratch.

# APPNOVATION

Thank you again for downloading this E-Book. If you have any questions about your upcoming website redesign, or if you need technical support, development, or design services, contact us today at [contact@appnovation.com](mailto:contact@appnovation.com). We look forward to hearing from you soon!

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Proudly delivering quality projects to companies, organizations and government entities around the world. Here are just a few of the names you might recognize:

