WEB AND APP ACCESSIBILITY

Your Roadmap to Digital Inclusion

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INTRODUCTION

Who Is This e-Book For?

This e-book is for you, if you fit into any of these categories:

You are responsible for, or involved in, ensuring accessibility of some or all of your company's digital channels such as websites, mobile apps, internal applications, kiosks, etc. *Relevant for companies of all sizes and industries.*

You already understand the importance of digital inclusion from the legal, social and practical points of view, but you need help developing an end-to-end strategy. You need practical steps, backed up with real-world examples that will help you plan and communicate your vision to management and your company at large.

You have already started your journey but need to develop an integrated and streamlined approach to efficiently maintain digital accessibility on-going; a program that involves multiple job functions and processes within your digital ecosystem.

What Will You Learn?

After reading this e-book, you will gain a deeper understanding of how to plan, execute and maintain a successful accessibility strategy for your digital channels. You will learn the different techniques and program considerations that our team at UsableNet has found to be most useful in our 17+ years of helping clients in all major industries. You will get a detailed look at the different roles and responsibilities involved at each stage of a typical digital accessibility program and the best ways to motivate each role for on-going success. We will take you step-by-step through each stage, providing best practices and real-world examples, which you can utilize and emulate with your own teams. Each chapter focuses on a different stage of the program, which when put together forms the ultimate guide for developing an enterprise-level roadmap to digital inclusion.
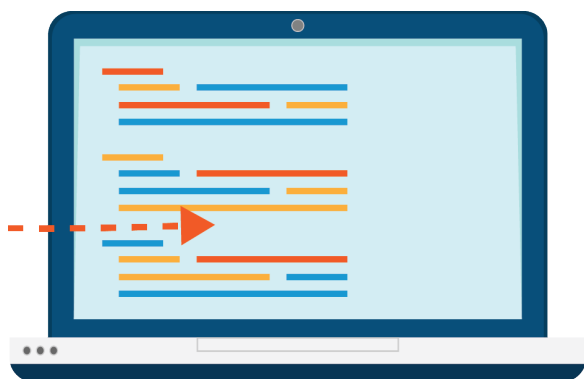
Why We Wrote This e-Book?

With nearly two decades of experience in digital accessibility and usability, our goal is to provide program support by setting a clear and practical path that all businesses can follow to achieve and maintain accessibility for their digital channels, while emphasizing the importance of involving the disability community every step of the way. We hope that by providing this guidance, it will help accelerate the adoption of digital inclusion beyond the likes of Apple, Microsoft, and IBM and propel it into the mainstream digital world, benefiting millions of lives.

There is already a lot of good content out there that covers the purely technical aspects of making digital properties accessible, so the focus of this ebook is on how to engage and guide resources across your organization in order to achieve your overall goals for digital accessibility.

I would like to acknowledge my accomplished colleagues and clients over the years that have contributed to the content of this e-book. Specifically, Scott Winkoff at UsableNet for his contribution, which is reflected in the comprehensiveness, detail and consistent formatting of this e-book.

What to Expect from This Book?

'Your Roadmap to Digital Inclusion' is made up of four brief chapters, each focused on a different stage of the typical digital accessibility program: Plan and Communicate; Test and Audit; Fix and Verify; and Maintain, Train and Document. Each chapter is broken down into six key sections:

How to approach this stage

Key considerations for the roles and resources involved

Incorporating the disability communities

Real-life examples and best practices to follow

Key documents needed

Checklist to ensure you have your bases covered

Get ready to be Inspired!

Before we dive in, it's important to remember why you're here in the first place. The digital world has become so significant that it has forever changed the way we all work, educate, manage finances and engage with friends and family; basically every aspect of our professional and personal lives. People with disabilities who cannot use the websites and apps that non-disabled people use every day are at a significant disadvantage.

Digital inclusion is about equal opportunity for employment; it's about equal access to products and services; it's about equal rights, and court verdicts have begun to reflect that sentiment.

As a manager or contributor to your digital experience, you are in the best position to influence how your company addresses this important issue. Over the past two decades, we at UsableNet have met hundreds of incredible people from the disability community that inspire us to continue pushing digital inclusion into the mainstream. On your journey, you

will meet people that will change the way you view how people interact with your digital experience and hopefully they inspire you to continue doing your part in creating a more inclusive digital world.

CHAPTER ONE:
PLAN AND COMMUNICATE

Approaching this Stage

Set the foundation. In this first stage, you will establish and agree upon your company goals for digital accessibility, including the channels that you will address, the standards you will abide by and the overall timeline for your program.

The success and ultimately the effectiveness of your program will largely depend on your ability to make a strategic plan and communicate it effectively. I continue to see organizations invest in initiatives without fully mapping out a detailed roadmap and timeline, resulting in little progress made on their investment. I've also seen companies fail to effectively communicate their strategy across all their teams, resulting in mis-understood efforts that end up being inefficient.

The importance, both practically and legally, of creating and communicating an official plan for accessibility cannot be overemphasized.

Roles and Resources Involved

Most companies have little knowledge of digital accessibility and the challenges associated with addressing the issue. Due to the specific nature of the techniques and expertise required for achieving and maintaining accessibility, companies that lack the proper resources will need to work with a partner in some capacity. If you don't have an in-house accessibility position or team in place, your first step will be to consult an accessibility expert.

During this stage, you'll work with your selected partner to map out your digital inclusion roadmap. In the following chapters, I break down the various steps and considerations for each program stage, which will arm you with everything you'll need for planning your roadmap and asking the right questions of potential partners.

Once you've developed a plan, your first step will be to create an accessibility policy to communicate your strategy to your organization. This policy will inform your teams on why your company is taking these steps and to clarify to those involved how their current roles are going to change. Open communication about your program will set a strong foundation for your teams, demonstrating that the pursuit of digital accessibility will be a collaborative effort with the full support of managers and colleagues.

External communication is equally as important. Located on your website, Apps and other channels, your accessibility statement will communicate your company's intentions and efforts in pursuing digital inclusion. A public accessibility statement shows current customers, potential customers, partners and legal entities that you're dedicated to achieving accessibility across all properties (and screens), digital and physical. But most importantly, it communicates to people with disabilities that you value them equally as potential customers and employees.

After you finalize your accessibility policy and statement, you'll want to have them reviewed and confirmed by a lawyer, which can be internal or external counsel. There are many lawyers with experience in both physical and digital accessibility, who can help ensure that your internal and external documents are clear and in line with industry standards.

Digital accessibility is a collaborative effort between all teams involved in creating and maintaining your digital experience. You should involve all relevant department heads in the process of generating your accessibility strategy:

Legal and Compliance

Legal and compliance heads need to review your accessibility statement to ensure it is clear, maintainable and includes all legal requirements.

User Experience and Design

Design teams needs to ensure that the policy and work planned are in line with brand guidelines.

Marketing

Marketers needs to be aware of your program as they are involved in managing public relations and your customer experience.

Development

Developers need to know that the compliance timelines are achievable and that their team has the expertise and resources required to accomplish the task.

Management

Business managers need to know the costs associated with your plan and how this may affect timelines of existing and future releases.

Community Engagement and Feedback

The most important element of any digital accessibility program is the engagement and feedback from the people it will impact the most – those with disabilities, who rely on assistive technologies on a daily basis. During your planning stage, start developing a network of assistive technology users from within your company, customer base and local communities. Try to ensure that within your network of users you have representatives from all major disability groups (visual, hearing and cognitive).

Strong collaboration with a network of assistive technology users throughout each stage of your program is essential for gathering important feedback to ensure you're making progress. It also creates a set of champions that will support and promote your brand for the work you are doing to improve digital inclusion.

At this point, you should start involving your human resources team as part of your internal communication. Make sure they understand the importance of following inclusive hiring best practices, at all levels and across all departments of your organization.

At the end of the day, you shouldn't be looking to simply check the boxes from a set of guidelines to achieve accessibility; you should strive to maximize usability for users of all abilities, across all screens.

Key Documents

Internal Accessibility Policy

External Accessibility Statement

Actionable Digital Accessibility Roadmap

Real World Examples and Best Practices

The foundation of your digital accessibility policies will be the compliance standards you are aiming to abide by, for each of your channels. The '**Web Content Accessibility Guidelines**' (WCAG) are the internationally accepted technical standards for making web and App properties accessible and were developed by the World Wide Web Consortium (W3C). The W3C is an international organization that develops standards for the world wide web. As part of their 'Web Accessibility Initiative' (WAI), they established the WCAG standard, which has three levels: A, AA and AAA. In order to meet the needs of all major disability groups, organizations are expected to conform to the WCAG level AA standard.

While the WCAG standard focuses on 'web content', the WAI provides extensive documentation on how to interpret and apply the guidelines to other digital properties. For mobile accessibility, they provide **a technical guide** specifically for web and non-web mobile content and applications and for PDFs they have the '**PDF Techniques for WCAG**'.

Make sure that all of the tools and techniques you use operate based on this standard.

*Figure 1: A screenshot of a policy template recommended by the W3C. The content of this example can be found **here**.*

[Organization name] is committed to ensuring accessibility of its website and intranet to people with disabilities. New and updated web content produced by our organization will meet [link to standard] [version number], [level of conformance], by [compliance date].

Existing web content produced by our organization will meet our standard by [existing content compliance date].

Content provided for our site by third-party developers will meet [third-party content standard] [version number] by [third-party content compliance date]. This [does/does not] include user-generated content.

We aim to ensure that our authoring tools and processes meet [authoring tools standard] [version number] by [authoring tools compliance date]. By [preferential purchasing date] we will preferentially purchase authoring tools that meet or exceed our web accessibility policy.

This policy will be reviewed [review period] on or before the [policy review date]. This policy was last reviewed on [last review date], by [reviewer].

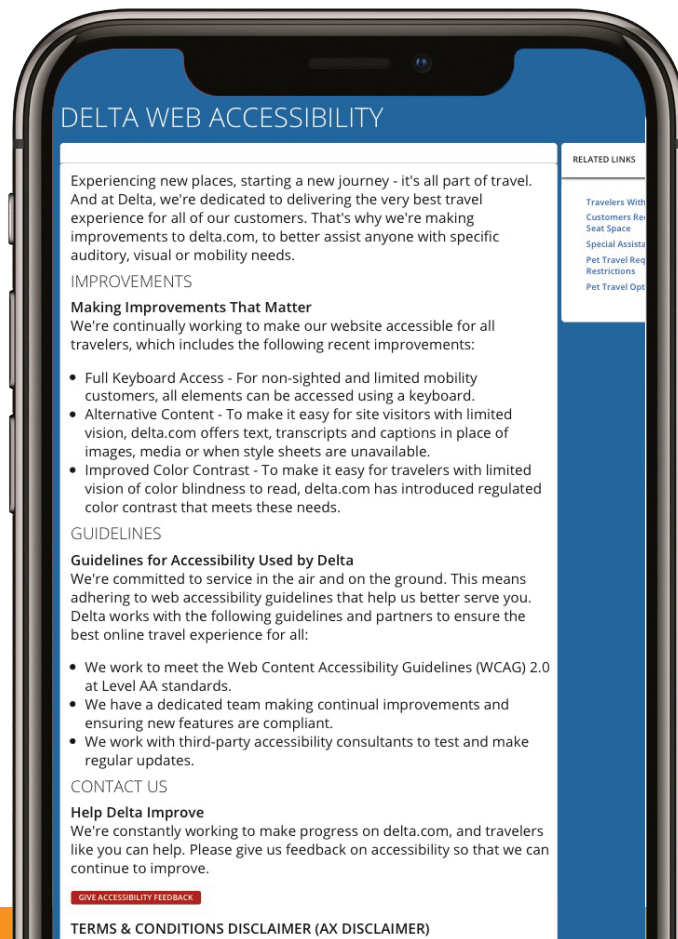## WRITING YOUR ACCESSIBILITY POLICY & STATEMENT

When drafting your accessibility policy, the W3C has a variety of useful resources to reference. They provide **an outline** of the elements to consider when constructing a simple accessibility policy, along with a policy template, shown in **Figure 1**.

Your policy should communicate the new standards and protocols for your internal teams and third party partners. It should state a clear timeline for achieving your goals and show that your company is dedicated to making digital accessibility a priority. For a more comprehensive breakdown of policy structure, reference the W3C's '**Example Comprehensive Policy**'.

As for your accessibility statement, you should inform external stakeholders about your program and the work you've already done. It's useful to research similar companies in your industry, who have been recognized for being a leader in accessibility, and review their statement. A good example is **Delta Airlines**, shown in **Figure 2**, who is a leader in accessible online travel.

Delta lays out an overview of their initiative and why they're dedicated to ensuring accessibility for all users. They document the accessibility standard they are working to meet and the progress they've already made. Most importantly, they provide a clear and easy way for users to give feedback and contact them if they have any accessibility-related issues.

*Figure 2: A screenshot of the Delta Airlines Accessibility Statement. The full text of the statement can be found **here**.*

DELTA WEB ACCESSIBILITY

Experiencing new places, starting a new journey - it's all part of travel. And at Delta, we're dedicated to delivering the very best travel experience for all of our customers. That's why we're making improvements to delta.com, to better assist anyone with specific auditory, visual or mobility needs.

RELATED LINKS
Travelers With
Customers Req
Seat Space
Special Assista
Pet Travel Req
Restrictions
Pet Travel Opt

IMPROVEMENTS

Making Improvements That Matter
We're continually working to make our website accessible for all travelers, which includes the following recent improvements:

- Full Keyboard Access - For non-sighted and limited mobility customers, all elements can be accessed using a keyboard.
- Alternative Content - To make it easy for site visitors with limited vision, delta.com offers text, transcripts and captions in place of images, media or when style sheets are unavailable.
- Improved Color Contrast - To make it easy for travelers with limited vision or color blindness to read, delta.com has introduced regulated color contrast that meets these needs.

GUIDELINES

Guidelines for Accessibility Used by Delta
We're committed to service in the air and on the ground. This means adhering to web accessibility guidelines that help us better serve you. Delta works with the following guidelines and partners to ensure the best online travel experience for all:

- We work to meet the Web Content Accessibility Guidelines (WCAG) 2.0 at Level AA standards.
- We have a dedicated team making continual improvements and ensuring new features are compliant.
- We work with third-party accessibility consultants to test and make regular updates.

CONTACT US

Help Delta Improve
We're constantly working to make progress on delta.com, and travelers like you can help. Please give us feedback on accessibility so that we can continue to improve.

GIVE ACCESSIBILITY FEEDBACK

TERMS & CONDITIONS DISCLAIMER (AX DISCLAIMER)

POLICY & STATEMENT CONSIDERATIONS

For Your Accessibility Policy

Include all of your digital channels in your policy and plan (public websites, mobile apps, kiosks, PDFs, employee systems)

Prioritize each channel for your accessibility program with internal stakeholders

Decide the accessibility standard you will meet

Determine a timeline for meeting your selected standard and for each channel

Map out all the teams that will be involved in your accessibility program (design, development, QA, content management, etc.)

Think about how you are going to incorporate the disability communities into your accessibility program

Ensure your policy is agreed upon by all department heads involved

Communicate your accessibility policy to internal stakeholders

The importance, both practically and legally, of creating and communicating an official plan for accessibility cannot be overemphasized.

For Your Accessibility Statement

Describe why you are pursuing digital accessibility

Detail everything your company has done thus far to support digital inclusion

Map out how your company is planning to achieve your accessibility goals with your timeline

State the specific accessibility standard each of your digital channels with abide by

Include a way for users to easily contact you if they have any accessibility-related issues

In the following chapters, I break down resource considerations, technical requirements, best practices and real-world examples to help you answer these questions that will be the foundation of your digital inclusion roadmap.

CHAPTER TWO:
TEST AND AUDIT

Approaching this Stage

Establish a starting point. In this stage, you will be actively evaluating where you currently stand in terms of accessibility for each of the digital channels, which will indicate how much work is ahead. The number of issues identified and the complexity and severity of said issues will determine the resources and attention required to conform your digital properties and make them usable to all users.

In order to establish the scope of your evaluation, you will need to map out and prioritize each of your digital channels within your accessibility policy – websites, mobile sites, native apps, PDFs, kiosks. All the ways that customers, staff, and partners may access your services and information need to be made accessible. If you have multiple channels, it's best to implement phases of your initiative based on how you prioritize each of your digital channels.

Roles and Resources Involved

Typically, the first step in the evaluation phase is to perform automated scans of your core pages with a free online testing tool. With this initial feedback of the basic errors on your core pages, you will find it easier to get buy-in from upper management when you bring the social, legal and commercial imperatives to the table. While this first step sheds some light on your current level of compliance, you cannot rely solely on these automated tools, as they will only catch simple issues and miss the more complex ones that require human analysis.

A comprehensive evaluation of your website (or app) requires an audit of your entire user experience by an accessibility expert along with user testing by users of assistive technology. This will give you the full picture of everything you'll need to address in order to make your digital properties compliant by WCAG AA standards and usable for all users. The resulting audit report should provide a detailed list of all issues identified on your website (or app), which will bring a sense of formality and structure to your program.

Accessibility audits, when done correctly, require a significant amount of resources. You are going to need advanced testing tools and usability experts to effectively map out and audit every user journey across all of your digital channels and to interpret the results. It is vital that your selected partner can provide these resources and can support all your teams involved in the process.
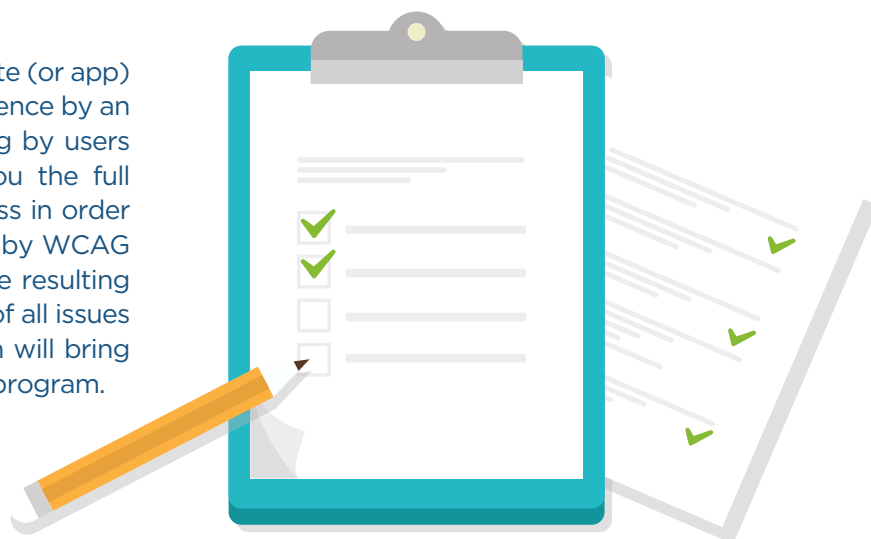
The key roles involved in the testing and auditing process are:

Management

Business managers are responsible for your project's budget and need to know that they are investing in a comprehensive audit that will identify all issues. They are also involved in determining which channels to prioritize.

Development

Developers need to be able to take the audit report and quickly fix all issues identified. To streamline this process, they need to ensure the audit report is actionable and provides sufficient details for easily finding each issue within your digital experience without confusion. This is why employing accessibility experts who are also developers is ideal, because the audit reports are developer-friendly.

Project Management

Project managers need to support the prioritization of channels for the program in order to map out a project timeline. They also need to be able to diagnose issues based on severity and complexity in order to determine how long they will take to fix and how many resources they will need to allocate. Another common responsibility of project managers is selecting and managing representative user testers from the disability communities and integrating their feedback into the evaluation process.

Training Management

Assign ownership of accessibility training to a specific team. At this stage, the assigned team or role should start thinking about the skills your teams will need to learn, whether it be accessible design, testing or development.

Community Engagement and Feedback

The importance of involving people from the disability communities to review the usability of your digital experiences cannot be overstated. As I outline in the next chapter, having a formal arrangement with a set of skilled user testers that cover a range of abilities and assistive technologies will give you a balanced and wholesome testing approach. Their feedback will complement the issues identified by the expert audit and provide a truly comprehensive evaluation of your website (or app).

Professional user testing look to ensure that there are no usability issues that may have gone undetected by the audit, which happens quite frequently. Audits that focus purely on following the technical guidelines can miss real challenges that only testing with actual users can detect. Working closely with a professional network of user testers as part of your audit will allow you to capture all issues you'll need to fix in order to improve accessibility and usability for all.

Key Documents

Executive Summary Report
Initial conformance with all channels

Issue Prioritization Report
Issue breakdown based on severity and complexity

Detailed Actionable Issue Report
For each channel

Real World Examples and Best Practices

AUTOMATED TESTING FOR INITIAL EVALUATIONS

There are a variety of online resources you can leverage to perform the initial tests of your digital properties. Below are good tools for getting a general sense of your issues for each digital channel and establishing a starting point.

One of the more popular free automated evaluation tools for websites is the **WAVE accessibility evaluation tool**, shown in Figure 3. This tool will scan your URL and relay the number of basic errors, the type of errors and indicate where on the page they occur.

Figure 3: Two screen shots of the WAVE tool interface. It illustrates how WAVE displays the results of a single page accessibility evaluation into different groups including errors and alerts

Apple and Android provide useful resources for performing self-accessibility evaluations of your mobile apps. Apple walks through using **VoiceOver** to identify problem areas in terms of accessibility. While Android provides a **technical guide** for making your apps more accessible, as well as an '**Accessibility Scanner**' app that provides suggestions for accessibility improvement without requiring technical skills.

To support PDF accessibility, Adobe's Acrobat provides a variety of tools that make checking and creating accessible PDFs easy. You can reference the accessibility portion of the '**Acrobat User Guide**' to walk-through how to use each of these tools.

ESTABLISH REPRESENTATIVE SAMPLES FOR YOUR DIGITAL PROPERTIES

For complex digital properties with an abundance of content, features and functionalities, it may not always be feasible to evaluate the entire experience at once. In these cases, a practical and logical first step is to establish a representative sample of your most important user flows or web pages, which will act as the basis of your initial evaluation scope. Doing so will ensure that you capture and address the most important parts of your digital experience right away. The W3C sets out this concept in its '**WCAG Evaluation Methodology**'.

You can start identifying these key journeys and pages by leveraging your current analytics to determine the most trafficked features and content within your website or app. This will allow you to focus your resources on the most important parts of the site or app experience. Additionally, the issues found in these areas will typically be representative of those found throughout your entire digital experience. Taking these steps will allow you to start by addressing the core issues impeding users the most, and then scale out your efforts to the remainder of your digital experience.

Figure 4: Screen shot of a sample compliance report for a website. It shows that the compliance of a website is based on how many success criteria of the WCAG passed or failed. Each success criteria is represented by a square with the success criteria reference number. Blue indicates that the criteria were passed, red indicates it failed and amber indicates that a manual review of the item is still needed.
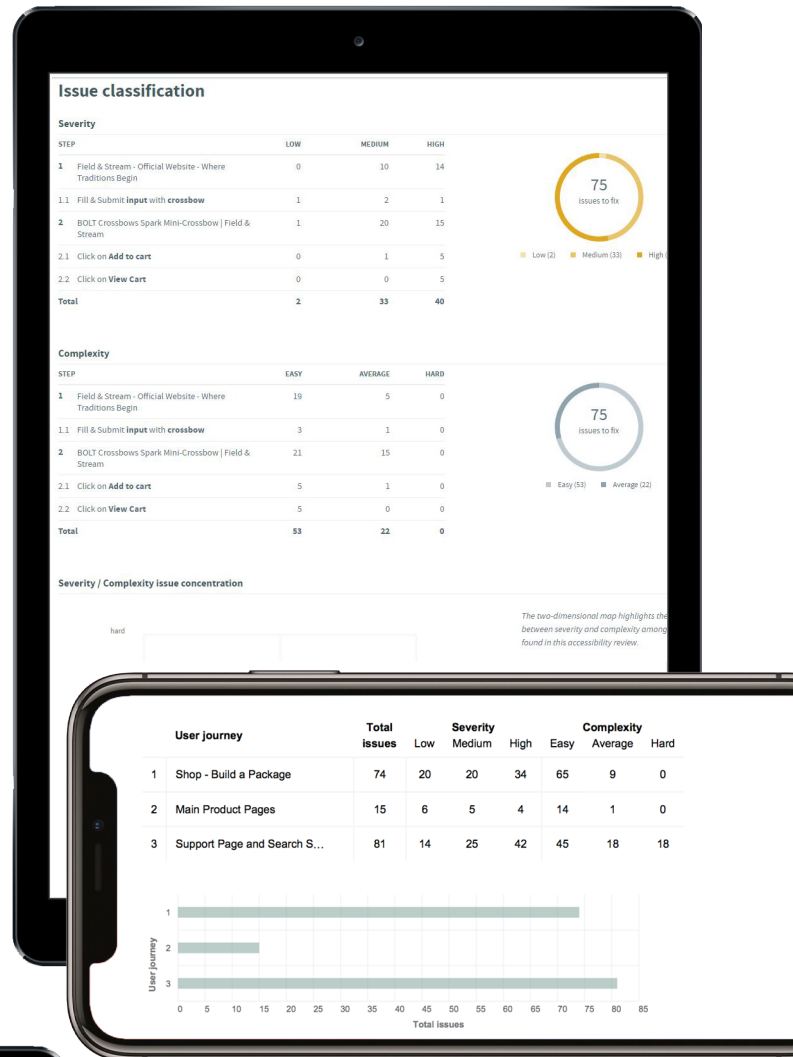
AUDITING YOUR DIGITAL PROPERTIES

The auditing process is different based on your partner, but there are a variety of techniques and deliverables that will not only make issue identification more efficient, but will also streamline the following steps of issue remediation and reporting. Below are real world examples of best practices that will set you up for success.

One best practice, which not all accessibility consultants follow, is to classify issues based on severity and complexity. As shown in **Figure 5**, an Issue Prioritization Report breaks down the total number of issues identified for each user journey audited for easy prioritization. The issues within each step of each user journey are broken down based on severity (how severe the issue is to the user) and complexity (how complicated the issue is to fix).

This report is useful for project managers who are responsible for allocating resources and developing a project timeline. This level of insight allows your team to prioritize more effectively to not only maximize your resources but also to immediately remediate the issues impacting assistive technology users the most.

The last deliverable to consider at this stage is the Audit Issue Report. Used primarily by your developers, this key report should be detailed and actionable, making it easy to find and fix the issues identified. When looking for a partner to audit your site, one useful tip is to employ accessibility experts, who are also developers, because they will provide detailed issue reports that are developer-friendly, as shown in **Figure 6.**

This particular audit report maps out all issues identified at each step of each user journey, while also providing links that go directly to the location of the issue. It is best practice to provide this level of detail and direction for your developers to streamline issue remediation later on.

CHAPTER TWO CHECKLIST:
TEST AND AUDIT CONSIDERATIONS

Develop a business case based on results from free automated testing of core website pages or native app user flows

Establish representative samples for your digital properties

Combine human analysis, user testing and accurate automated testing tools to audit each of your digital channels (mobile, desktop, tablet, etc.)

Have audit performed by accessibility experts, ideally developers with accessibility expertise

Generate overall conformance reports based on WCAG AA standards for each of your digital channels audited

Ensure your audit report is actionable and makes it easy for your developers to quickly find each issue identified

Classify issues based on complexity and severity for prioritization

Organize and facilitate user testing by daily users of assistive technology and incorporate their feedback into your evaluation process

Many of the best practices and key considerations outlined in chapter two are meant to set you up for success later on. While you want to ensure that your process for evaluating your digital properties is comprehensive, you should also be mindful of what you can do to streamline issue remediation and verification as well. The next chapter details the steps and best practices for overcoming the challenges organizations face when fixing the issues identified in the evaluation stage and then verifying their efforts.

CHAPTER THREE:
FIX AND VERIFY

Approaching this Stage

Time for action. This stage is all about activity and results. For companies expanding to new digital channels with a mobile site or app, it's important to remember that the easiest and most cost-effective way to address digital inclusion is by designing with accessibility in mind from the start. With that said, most companies already have websites and/or apps live, many of which are complex and constantly changing.

Due to the resources and expertise necessary to fix the accessibility issues on a website (or app) and then verify them, third-party support is typically required. Naturally, you'll want to turn to the accessibility partner that originally audited your site, but it can be challenging to find the right partner who can both help you comprehensively evaluate your digital experience and support issue remediation and verification. So, when vetting potential partners for an audit, use the following considerations to determine if they'd also be capable of helping you fix what they find.

Roles and Resources Involved

Issue remediation is the most challenging stage and thus requires the most consideration, in terms of team resources. Accessibility issues should be handled in the same way that you would address regular user issues identified; they require involvement from each of your teams involved in maintaining your digital experience.

Typically, the teams involved in this stage include project management, UX design, development, and QA testing. The techniques and amount of resources required will vary based on the website or app, but in general, you'll need UX to make design adjustments, developers to update the code, and QA to verify conformance before deploying changes. Based on the skills, experience, and availability of your teams, your selected accessibility partner may be your resource for team training, developer support, and other remediation services. Some partners provide fully-managed remediation services for companies with internal teams that can't take on any additional work and need their partner to do it for them. Other companies focus more on audits and training.

As previously mentioned, different channels require different techniques and resources. When it comes to websites, the primary channel for most companies, you have more options at your disposal. There are two main approaches to fixing a website. The more traditional approach, which I've laid out above, involves your internal teams updating your website to address the accessibility issues with support from an expert in the areas of accessibility training, accessible design and development.

The second approach that's gaining popularity is to implement a 'Conforming Alternate Version' of your website. A conforming alternate version is a view of an original web page or user flow that is created specifically for users with disabilities. With this approach, a third-party would create a view of your website that conforms to the WCAG AA standards that users with disabilities can navigate to via an easy to find link on your original website.

When determining which remediation approach is best for your website, it's helpful to look at the pros and cons of each through hypotheticals.

If not built in from the start, altering a website for accessibility can significantly impact core functionalities - especially for transactional sites that are highly complex, like **Figure 7**.

In this case, implementing a conforming alternate version may be the most effective way to practically make their website accessible, especially when time is of the essence.

For a simpler, more informational website that isn't updated frequently, **Figure 8** for example, a better approach would be to simply have internal teams enroll in training sessions and fix the issues themselves with the support of a partner.

There are benefits to fixing the code of the original website to make it accessible. For example, people with disabilities don't need to take an extra step upon entering your website to find the content and features they can use. In addition, the modifications for accessibility make it easier for search engines to crawl your content, resulting in improved search engine optimization.

Figure 7: a screenshot of a complex e-commerce website.

To reiterate, these are both retroactive approaches to addressing accessibility issues and should not change your vision for future sites, apps or updates going forward. While you plan for how you're going to update your existing channels, it's important to also think proactively about how you will incorporate accessibility into the development of future digital projects.

Once you have gone ahead and fixed all issues impeding daily users of assistive technology, you will want to move forward in verifying that your site meets the WCAG AA standard. A common verification approach is to simply re-audit the remedied website or app. While audits do provide a decent sense of your level of accessibility, it is best practice to have daily users of assistive technology test your website as well. Not only is this best practice, but it's often a defendant's responsibility as part of a legal settlement. Again, user testing with people from all major disability groups is the best way to verify that your website is fully accessible and usable.

Figure 8: a screenshot of simple content website..

The roles involved in this stage include:

Management

Management need to understand the cost of each remediation approach and the implications of each on your digital experience.

User Experience and Design

UX experts and designers need to understand how the changes will affect your current user experience, along with the options they have to maintain it.

Development

Developers need training on developing an accessible interface along with sufficient testing tools to test page elements in all environments – that is, if you are taking remediation in-house.

Quality Assurance

QA professionals need access to the same testing tools the Developers have so they can verify compliance by WCAG AA standard before pushing updates live. QA need to have access to and knowledge of most popular assistive technology.

Project Management

Your project managers need to effectively prioritize and organize issue remediation. They also need to generate both high-level and detailed compliance reports.

User Testing

Testing with everyday users of assistive technology should be an integrated part of your UAT process. Similar to how you would test a mobile site via a mobile device, you should add assistive devices to your browser testing process.

Community Engagement and Feedback

At this point, you should have already started user tasks on your website (or app) as intended. It's building relationships and working with people important to establish this as an on-going process, who have disabilities. In the verification stage, you in which user testers from all major disability groups should establish a formal arrangement with a set of regularly test major website (and app) updates and professional user testers that are daily users of assistive can easily communicate their feedback directly to technology to confirm they're able to complete your teams.

Key Documents

User Testing Verification
Feedback Report

Executive Summary Report
Updated compliance with all channels

Real World Examples and Best Practices

REMEDIATING A WEBSITE

When taking on website remediation, the first step is to grow your expertise through comprehensive training by an accessibility expert. It's vital that you give all of your digital teams the appropriate training, so they are prepared to do their part. A helpful resource for technical teams to reference is the W3C's '**General Techniques for WCAG**', which is the most comprehensive technical guide for conforming your website to their standard.
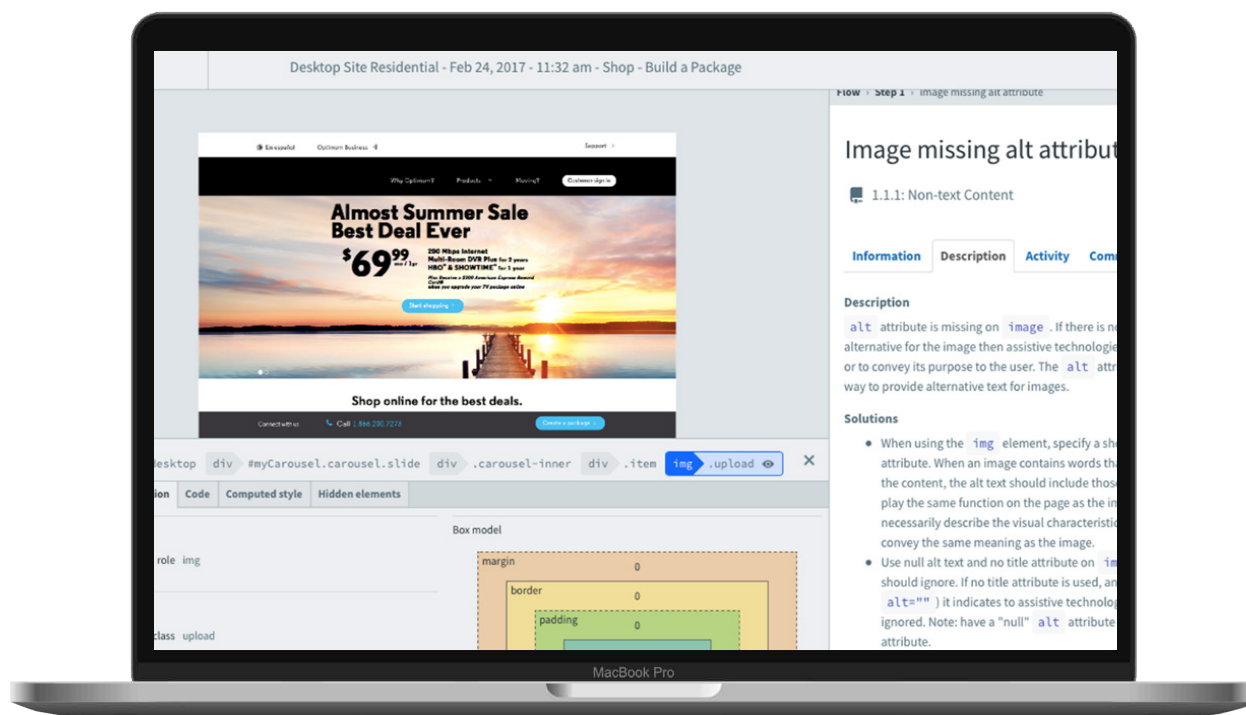

Figure 9: A screenshot of a particular issue being examined next to the associated code and UX element. In addition, it includes an issue description and tabs for more information, activity and comments.

Before you let your accessibility-trained team get to work, make sure they have all the tools they need to succeed. One core challenge that developers face during remediation is quickly finding each issue without confusion. This process becomes time consuming when there are multiple user journeys, multiple steps within each journey and a variety of issues at each step. In order to avoid wasting your developers time, it's best practice to have a tool that allows you to quickly pair issues with the exact page element that contains the error. A good example of this is shown In **Figure 9.**

The user can visualize the issue at hand alongside the associated code and UX element.

Other useful features that are demonstrated in **Figure 9** include the comments and activity tabs, which enable all people involved in the project to collaborate on issues with full transparency into the work that's already been done. These different features can empower your teams by streamlining issue discovery, team communication, and activity management.

REMEDIATION THROUGH CONFORMING ALTERNATE VERSIONS

The W3C details why a company may resort to having a conforming alternate version rather than fixing their original website, along with the associated requirements for an acceptable version. One important requirement is that the alternate view must be a seamless extension of the existing experience so that users with disabilities can reliably and easily navigate to it. Other requirements include ensuring the alternate view has the same functionality and information as the non-conforming content and that it is up-to-date.

One unique type of conforming alternate version is a Dynamic, Accessible View (DAV). DAVs allow you to accommodate all the changes required for WCAG AA conformance, without making any changes to your existing website – aside from a link to the 'Accessible View'. This view has the same content and features as the existing site but is optimized with the assistive user in mind. It is also dynamic, which means when content and features change or are added to the existing website, the view reflects the updates automatically. The main differentiator from many common conforming alternate versions is the consistent brand experience between the dynamic, accessible view and the original site. **Figure 10** is an example of a dynamic, accessible view for one of the largest apartment management companies in the United States.
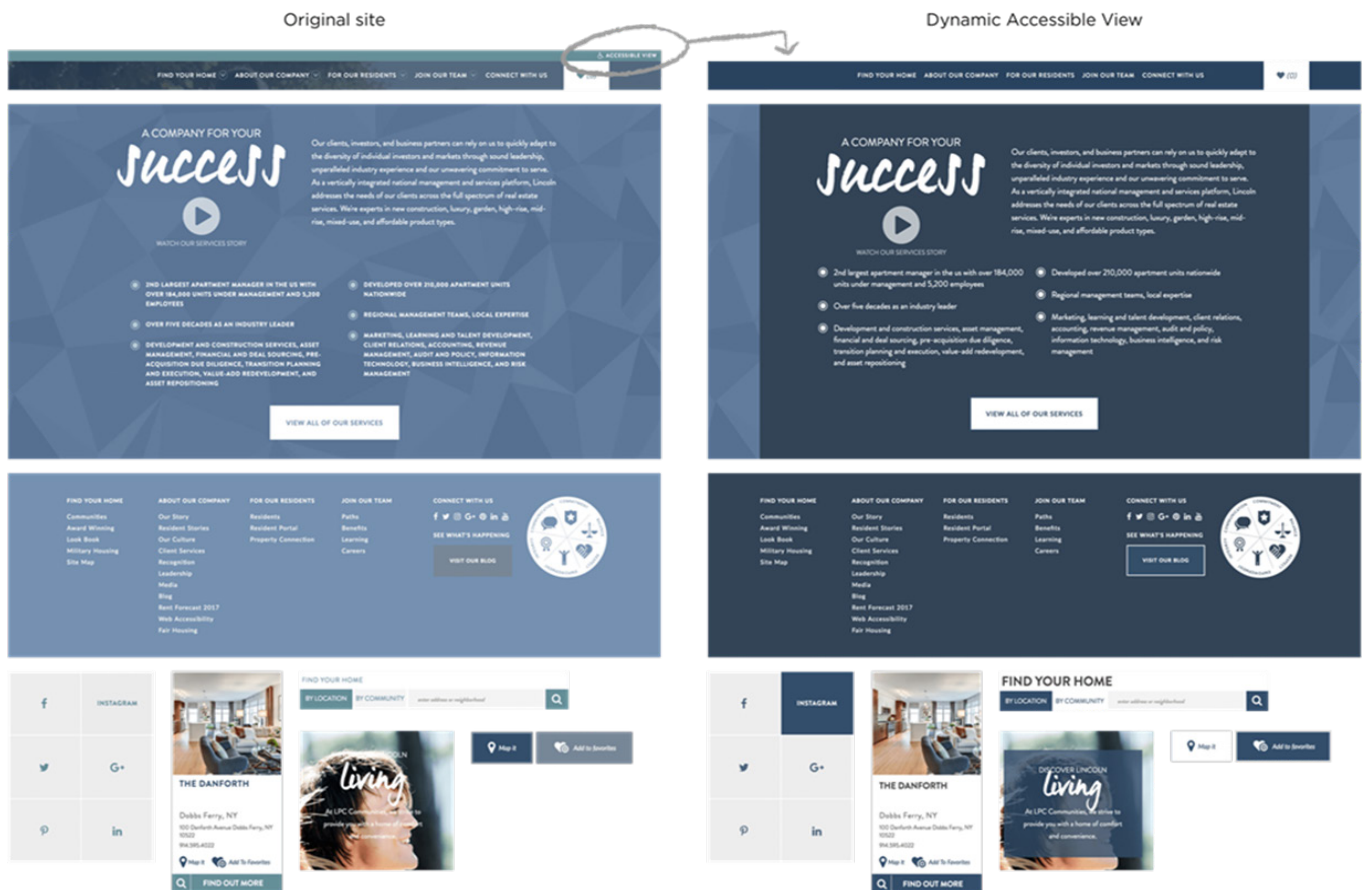

Figure 10: Two scree nshots that com pare a Dynamic Accessible View with the original website it's created for. T h e view on the le ft side shows the origina l website, while the view on the right is the Dynamic Accessible View. The image illustrates that the views are generally the same but shows some differences made in the Dynamic View to meet WCAG AA conformity.

VERIFY CONFORMANCE TO WCAG 2.0 AA STANDARD

Once you've fixed the initial issues on your website (or app), you should have your partner perform a re-audit to verify all WCAG AA success criteria have been met. Not only is this the first step in verifying your efforts, but it will provide management and compliance (or legal) teams with your new percentage of compliance, as shown in **Figure 11**.

While the follow up audit gives you a comprehensive assessment of your website (or app) after the fact, you're going to need to establish an automated testing process that allows your teams to immediately verify fixes made as they're fixing them. This requires an accurate automated testing tool that can capture and re-test complex user journeys and perform tests in staging environments. I continue to see teams' use insufficient testing tools, which results in frustration when their issues persist.
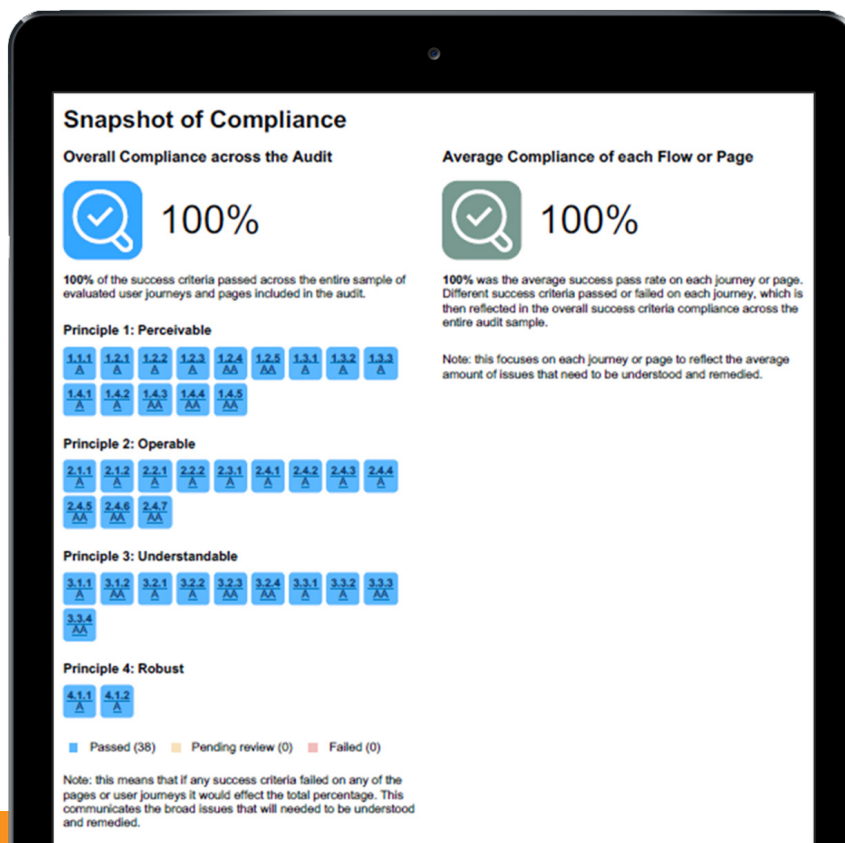

Figure 11: a screenshot of a sample conformance report for a website. It shows the overall conformance of the website audit and the average conf ormance of each flow or page, based on how many Success Criteria of the WCAG passed or failed. The report shows the site is 100% confromed.

USER TESTING FOR TRUE VERIFICATION OF ACCESSIBILITY AND USABILITY

If you follow the previous steps, you can successfully verify that your website (or app) conforms to the WCAG AA standard, but it's daily assistive technology users that do the true verification of your work. One of the most important points of this e-book is to emphasize the importance of incorporating user feedback into your accessibility efforts. Daily users of assistive technologies will give you detailed insight into the issues they're facing across all user journeys, as shown below in **Figure 12 and 13.**

While user testing does give you the most valuable feedback, there are some associated challenges. Companies often find it difficult to quickly acquire reliable user testers and act on their feedback, especially for companies with agile release cycles. The key is to integrate user acceptance testing (UAT) into your remediation and verification process. This can be achieved by establishing a formal agreement with a diverse network of user testers and having the proper tools to integrate their feedback into your processes.

Figure 12: Image on right shows the results of user testing feedback. It shows detailed issue descriptions from user testers based on specific WCAG AA success criteria.

1.3: ADAPTABLE	Comment
1	Nov 18, 2017 - 11:52 am by User10 I think the layout of the site was well organized. I just have a problem with how my screen reader interpreted the information.
2	Nov 21, 2017 - 10:13 am by User8 When I entered the address the response page with the list of businesses returned dropped me at the bottom of the page and I had to navigate backwards to the top to read the list of businesses available to in my

1.3 Task completion

User Journey	User11	User10	User9	User8
Search	❌	❌	❌	❌
Delivery Option - Home Delivery	✅	✅	✅	✅
Delivery Option - Pickup	❌	✅	✅	✅
Checkout - Guest user	❌	✅	✅	✅
Meals Option	❌	✅	✅	✅

✅ yes   ❌ no   - not provided

Figure 13: Image shows the results of a user testing a full user journey, broken down by task. It indicates which tasks they were able to complete or not.

FIX AND VERIFY CONSIDERATIONS

Website Remediation considerations

- Determine how significant the changes are that need to be made for conformance
- Account for how the changes will affect your current user experience
- Map out your internal resources to determine if you can take on this task in-house
- Identify the costs associated with making the required changes
- Establish a timeline for the remediation of issues
- Decide on which remediation approach is best for your website, and in what capacity you'll rely on your partner

For Conforming Alternate Versions

- Ensure version conforms with WCAG AA standards
- Make version a seamless extension of the original website
- Have all the same information, features and functionality as the original website
- Keep all the information, features and functionality must be up-to-date and maintained
- Provide a consistent brand experience, not just a text-only view

Organization, Prioritization and Process

- Provide extensive training for your design, development, mobile, QA and marketing teams
- Select a team to "own" accessibility within your company, usually a compliance or development team
- Plan how you will fit remediation into your existing roadmap

Accessibility and usability verification

- Establish an automated testing process, in which your development and QA teams have a sufficient automated testing tool to verify WCAG AA while they work
- Re-audit your website (or app) after remediation to verify conformance to WCAG AA
- Have contract with users of assistive technology test your website (or app) to verify accessibility and usability

At this point, you should have a comprehensive plan for achieving the accessibility of your digital channels, but this is only half the battle. While you plan your strategy for updating your existing websites and apps, it's essential to simultaneously think proactively about how you will incorporate accessibility into the development of future digital projects to maintain your efforts.

MAINTAIN, TRAIN AND DOCUMENT

Approaching this Stage

Maintain the momentum. This is less of a stage, and more of a new mindset. Maintaining accessibility is about taking all that you have learned about evaluating, fixing and verifying your digital channels and integrating it into your company's everyday processes. Think about it in a similar manner to how you have integrated security and privacy protocols into your processes.

Too often companies audit and fix the issues on their website and move on, finding themselves back at square one when updates are made to their content and functionality. Digital experiences change all the time and the most valuable advice for a company investing in digital accessibility is to shift your mindset from accessibility being one-and-done to an on-going program.

Thinking of accessibility from this perspective adds a new layer to how you should evaluate your approach for each stage of your program. You'll need to ensure that the methods and tools you use to test, fix and verify the accessibility and usability of your website (or app) can be integrated into your product and software development processes.

Roles and Resources Involved

First, determine how accessibility fits into each role involved in maintaining and creating your digital experience. In order to effectively maintain compliance, you'll need to make accessibility a part of your UX design, development, and QA testing processes going forward. When mapping out your roadmap and vetting potential partners, consider how their solutions for auditing, fixing and verifying compliance will fit into your systems development lifecycle (SDLC). Integrating compliance testing and UAT into each phase of development can be disruptive. You'll need sufficient team training and technology integrations to seamlessly introduce the new processes and help streamline the maintenance of compliance going forward.

Once you've selected the proper tools and have your new protocols in place, you'll need to update your accessibility policy to inform your organization on what's been achieved and the on-going plan. It's important to document your new process for integrating accessibility into your SDLC and add accessibility to any on-boarding training that is provided across all teams.

In addition, an update to your accessibility statement is in order. In your updated statement, write out the progress you've made in making your website fully conform to WCAG AA standards and how you will continue to pursue usability and accessibility for users of all abilities.

The teams involved in maintaining the communication and implementation of your accessibility strategy include:

Management

Managers needs to know the costs associated with the tools and expertise required for your on-going program. It's also important to keep them aware of the great work your company is doing to continuously improve digital inclusion across your channels. Doing so will help keep the high-level support needed for such activities.

Compliance and Legal

Compliance and legal heads need regular updates via reports documenting the status of your accessibility, so they have everything they need to respond to any regulatory, legal or other inquiries.

User Experience and Design

UX designers will need to design every piece of digital content to be accessible. The Nielson Norman Group provide a practical guide to Accessible Web Design.

Development

On top of extensive accessibility training, your developers need testing tools that can be integrated into their current environments and processes, so they can code to WCAG standards. Having developers use tools that allow them to test their work as they develop such as a chrome extension can reduce issues found in QA.

Quality Assurance

QA Testers will need document their on-going test plan and success criteria. There needs to be a clear understanding of the process by each team and how they can escalate issues back through the release cycle. Accessibility needs to be part of UAT sign off to maintain its importance and awareness.

Project Management

Project managers need to be able to streamline issue assignment, as they will be handling many issues across all digital channels on an on-going basis.

Marketing

Marketers need to understand their impact on accessibility when creating and updating content. For example, when adding content into CMS and Blogs, ALT tags need to be present. When creating new videos closed captioning always needs to be included. PDFs must be accessible.

Customer Service

Marketers need to understand their impact on accessibility when creating and updating content. For example, when adding content into CMS and Blogs, ALT tags need to be present. When creating new videos closed captioning always needs to be included. PDFs must be accessible.

Community Engagement and Feedback

As you start integrating all of your accessibility tools and processes into your development life-cycle, think about how you'll do the same for user testing. An important step in maintaining the accessibility and usability of your digital channels is to regularly engage with daily users of assistive technologies. It's important to maintain your user testing process and continue to integrate their feedback into your work.

If you have any employees who have a visual, auditory or cognitive disability, look to get their feedback on your work. Aside from employing professional user testers, establishing an inhouse group of stakeholders is one of the best ways to integrate user testing into your natural processes. It will also help your teams grow natural empathy and awareness of the daily challenges faced by this group of users.

Key Documents

Update your core accessibility policy

Update your accessibility statement

Real World Examples and Best Practices

INTEGRATING TESTING TOOLS FOR DEVELOPMENT AND QA

When companies fail to effectively maintain accessibility, it leads to a waste of time and money. Timelines are delayed and teams gets frustrated. The three main reasons companies fall short with their maintenance strategies are that they're using insufficient testing tools, they lack a sustainable process and they're working in siloes.

In order to successfully maintain your accessibility program, you will need to start by integrating accessibility testing tools into your SDLC and establishing mechanisms that allow your teams to collaborate effectively.

ACCESSIBILITY AS PART OF RELEASE MANAGEMENT PROCESS

The first step in integrating accessibility into your development process is adding accessibility testing guidelines into your current release management QA and issue tolerance protocol.

Typically, major sites and apps have "known issues", which make up sets of quality checks that are examined prior to a release. For each new release, a "go/no go" decision is made for each known issue based on the overall amount of issues and the severity of that specific issue.

Accessibility simply adds an additional set of checks to that release process, checking new releases based on a previously documented issue tolerance level for accessibility. This establishes a quality target for the accessibility of every release, while recognizing that it's impractical to have zero issues every time.

For example, your team may set an agreed upon tolerance level for releases, which tolerates a certain number of high, medium and low level issues to remain but none that are critical. The remaining issues should then be addressed as part of the next release. **Figure 14** shows a practical set of accessibility checks documented by grouping issues based on severity level (critical, high, medium and low). Additionally, it indicates the specific WCAG criteria in question and where each issue is located within the experience.

WCAG Go/no-Go Checklist

SEVERITY	ACCESSIBILITY VIOLATION	TESTING METHOD	LEVEL	WCAG CRITERIA	WHERE TO CHECK
Critical	Id attribute value must be unique (Duplicates IDs).	Automated Evaluation	A	4.1 Parsing	Section I - General Global section
Critical	Color Contrast.	Automated Evaluation	AA	1.4.3 Contrast (Minimum)	Section II - Heading & Text
Critical	Video player controllers must have a description	Visual / Screen Reader	A	1.2 Time based Media	Section I - General Global section
Critical	Video must have narration or description (closed caption and/or audio description)	Visual / Screen Reader	A	1.2 Time based Media	Section I - General Global section
Critical	Video controllers not accessible from keyboard	Handcheck	A	2.1.1 Keyboard	Section I - General Global section
High	Incorrect HTML tag language attribute.	Automated Evaluation	A	1.3.1 Information & Relationships	Section II - Heading & Text
High	Missing Elements when Zoom (whit the exception of by design for the responsive pages)	Visual	AA	1.4.4 Resize Text	Section II - Heading & Text
High	Incorrect Tab order.	Handcheck	A	2.4.3 Focus Order	Section I - General Global section
Medium	Tables without caption to provide context about its content.	Screen Reader	A	1.3.1 Information & Relationships	Section II - Heading & Text
Medium	ALT text not meaningful about it context.	Screen Reader	A	1.1 Text Alternatives	Section I - General Global section Section III - Images
Medium	Links without complete description.	Visual / Screen Reader	A	2.4.4 Link Purpose (In context)	Section I - General Global section
Low	Attributes not allowed for certain elements.	Automated Evaluation	A	4.1 Parsing	Section I - General Global section

Figure 14: a screenshot of a sample set of documented accessibility checks based on WCAG criteria.

INTEGRATING TESTING TOOLS INTO DEVELOPMENT AND QA

Many companies start out using free online tools during their development process and quickly find that not only are they inconvenient to use on a regular basis, but they frequently provide false positives.

It's best practice to find an accurate automated accessibility testing tool that can integrate directly into your release protocol and systems. Look for tools or platforms with robust APIs that can integrate with your release management system, such as Jenkins, as shown in **Figure 15**.

Another valuable feature to look for is a Chrome Extension of your accessibility testing tool. This gives your teams the ability to test sites live on the web, as shown in **Figure 16**. Your developers can then monitor your website to find any new issues that may arise as they continue to build and deploy new features. It's important for your tool or platform to support testing in both staging and live environments.

STREAMLINE ACCESSIBILITY PROJECT MANAGEMENT AND COMMUNICATION

The best way to streamline your accessibility projects is to break down the siloes within your program. This is most effectively done by opening channels of communication between
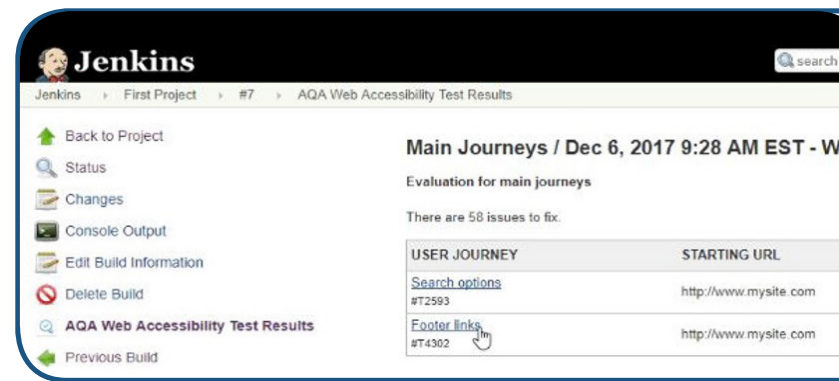

Figure 15: a screenshot of a list of user journeys being tested for accessibility conformance, within Jenkins.
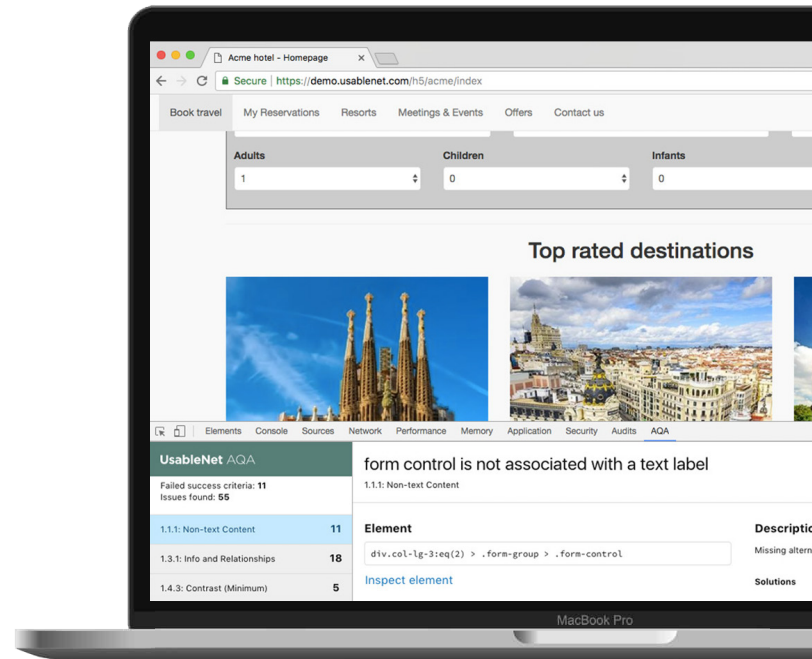

Figure 16: a screenshot of an automatic accessibility testing Chrome plug-in testing a website live on the web.

all of your teams contributing to digital accessibility. Ideally, you should have one location where all team members can test, review and remediate issues together.

A good example of this is demonstrated through the platform interface represented in **Figure 17**, which shows how teams can comment on specific issues and communicate in real time through a chat feature. Additionally, an activity section allows users to track all the work that's been done on a specific issue.

Centralizing your accessibilityrelated efforts in this way allows your teams to efficiently review and fix issues without wasting a minute.
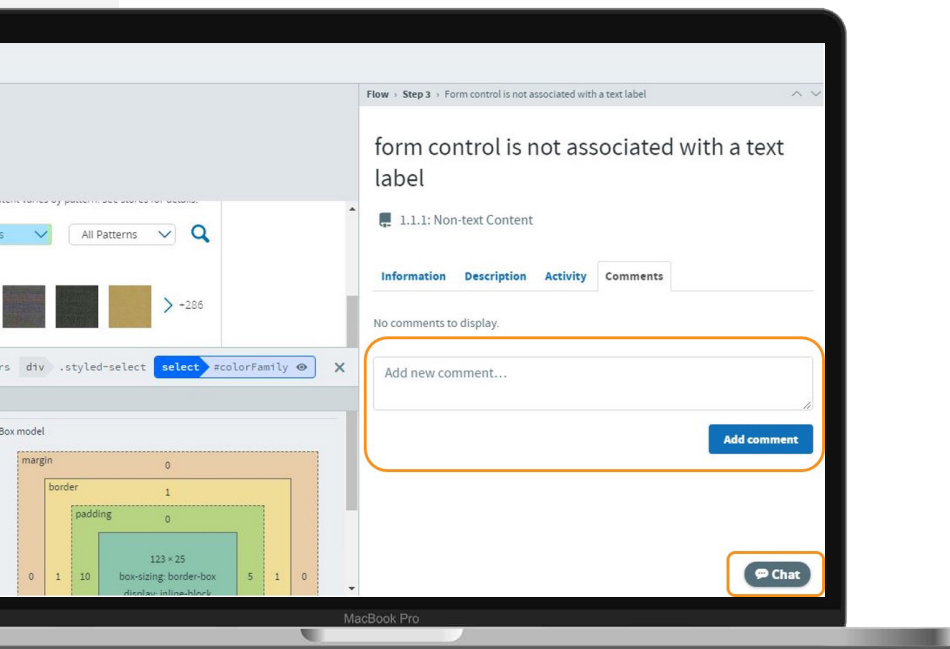

Figure 17: a screenshot of an issue being examined within an accessibility platform interface. The screenshot highlights the comment and chat features, which give teams the ability to communicate while identifying and remediating issues.

For project managers, being able to track the activity of all teams involved is valuable information. Tracking test activity and team usage, as shown in **Figures 18 and 19**, allows you to identify common challenges that developers are having, which may require a more specific training.

The last and most useful best practice for project managers involves streamlining issue assignment. Maintaining accessibility for all of your digital channels requires handling many issues on an on-going basis. To help this effort, it's best practice to find a tool or platform that can integrate with your project management ticketing system.

An example of this is shown in **Figure 20**, in which all issues identified by the manual, automated and user evaluations can be transferred into JIRA as tickets.

Figure 17 and 19: Images show two charts of testing tool activity. The first, indicates how often tests are being run based on the date, while the second chart shows the amount of tests and average issues for each page.
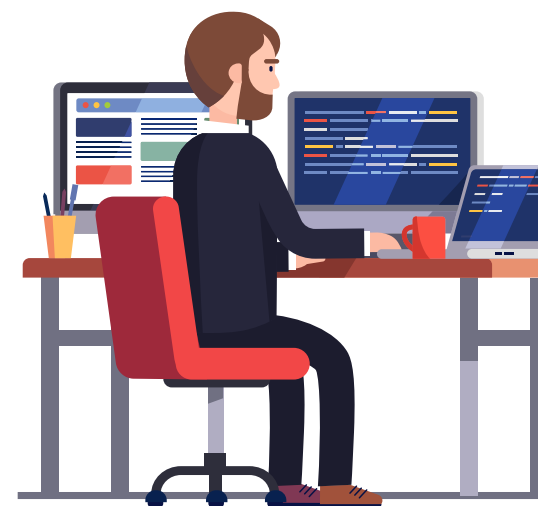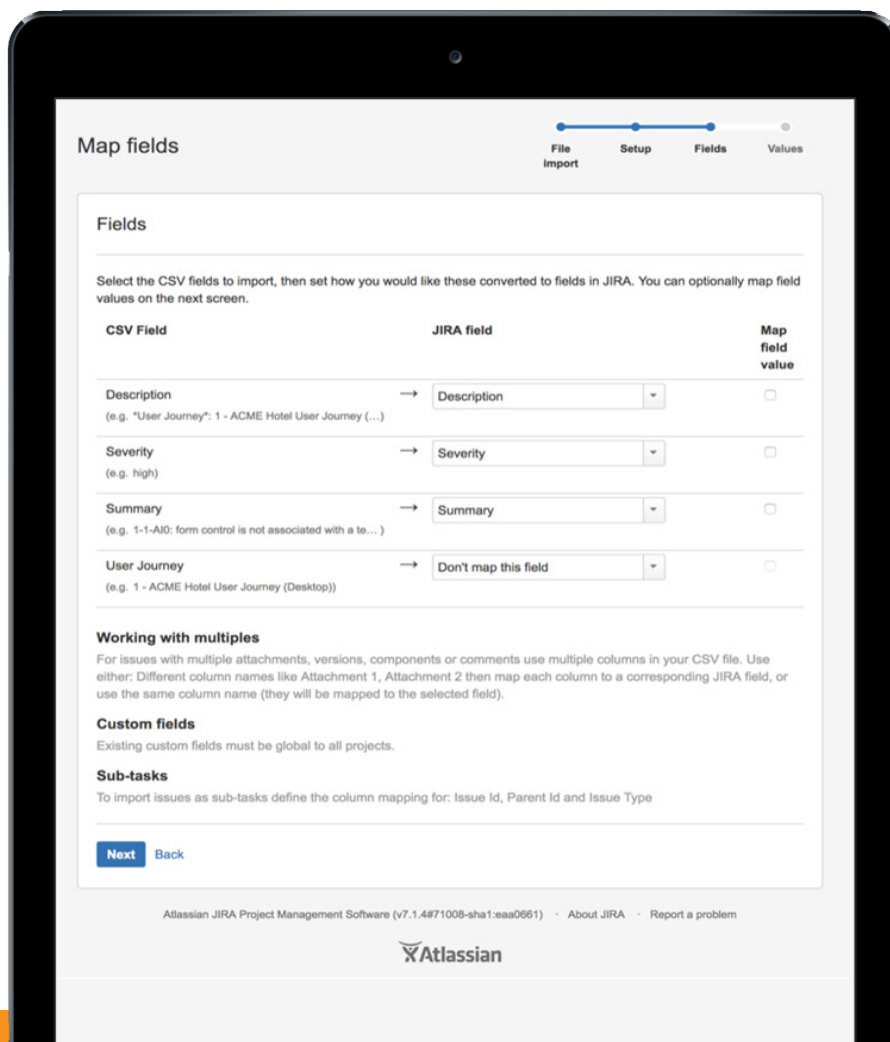

Figure 20: a screenshot of the JIRA interface. Shows an import of an accessibility issue into JIRA as a ticket.

MAINTENANCE CONSIDERATIONS

Integrate accessibility into SDLC

Train your marketing and management teams by introducing digital accessibility and reviewing relevant guidelines, regulations, and challenges

Train your UX team on the fundamental concepts for designing an accessible interface

Integrate your automated accessibility testing tool with your other systems such as Project Management and Continuous Integration

Train your QA team on where to include accessibility testing in the development lifecycle and how to validate that all principles of the WCAGAA standards are satisfied

Train Customer Service on how to handle and escalate issues reported by assistive users

Incorporate accessibility check points into user acceptance testing release process

Select a partner to fill any specific gaps that you do not have covered within your own teams

Involve human resources in your initiative to help ensure your company is following inclusive hiring across all company positions

Update accessibility policy

Informed your teams on the progress you've made in addressing accessibility

Align your teams on your new protocols for maintaining accessibility

Communicate your continued efforts for pursuing digital inclusion throughout your organization

Update accessibility statement

Update your statement to include your new level of compliance

Communicate your continued efforts for ensuring digital inclusion to your external stakeholders

Conclusion

Digital inclusion cannot be achieved by you or any one team alone; it requires awareness and on-going involvement by all people that contribute to your digital experience. As you map out your digital inclusion roadmap, continue to reference the steps and checklists in this book to help your teams seamlessly integrate accessibility into your overall digital roadmap.

I hope the insight and practical steps that I've laid out help you plan your program. It can be difficult to change the way you approach your digital strategy, but at the end of the day, there's nothing more important than ensuring equal access for users of all abilities.

Image description:
Image is a head shot of Jason C Taylor, the Author

About the Author

Jason C. Taylor is the Chief Innovation Strategist and Advisor to the UsableNet CEO with nearly 20 years of experience in usability and accessibility. He is a global technology thought leader for multichannel customer engagement, actively advising leading companies on how to extend their brands across multiple channels for all users.

He has been an active member of the accessibility and usability communities since 2001 which started with leading partnerships between UsableNet, Macromedia (now Adobe) and The Nielsen Norman Group.

About UsableNet

UsableNet is a pioneer in digital usability and accessibility, and has been helping global enterprises achieve and maintain digital inclusion for over 17 years.

For more, visit our website at **www.usablenet.com**