



Unlocking Inclusivity: Revamping Web Application Accessibility and Usability

A step-by-step guide for upgrading legacy
web applications to WCAG Compliance

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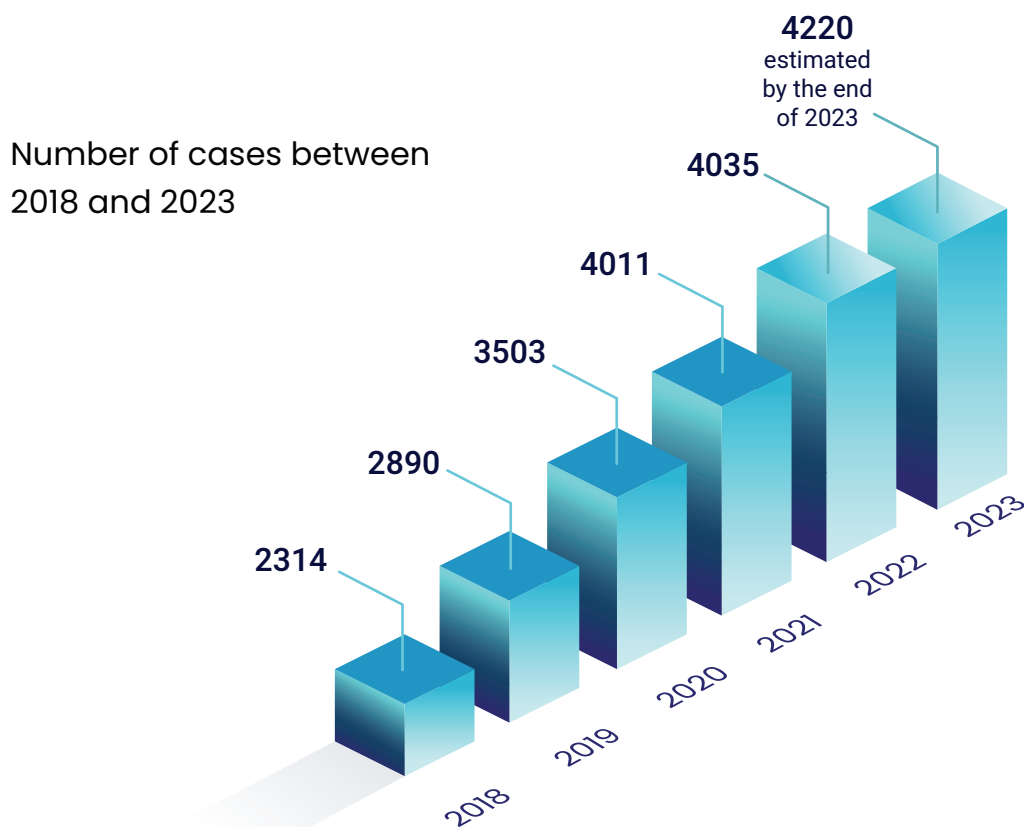
01. Introduction

The rise in Internet access over the past decade highlights the importance of Internet access for people with disabilities. This paper examines the current state of accessibility, the challenges organizations face in its adoption, and solutions to these issues.

As of 2024 January, **66.2%** of world's population are on-line, with many countries nearing **100%** Internet penetration (Ref). This as it may, a large portion of the websites are completely or partially in-accessible to people with disabilities. The World Health Organization notes that **15%** of people have disabilities (Ref.) that affect their online experience. Alarmingly, only **3.7%** of the website's home pages are free from accessibility errors (Ref.), underscoring the need for greater accessibility.



Governments have passed laws to protect the rights of persons with disabilities, increasing the number of legal cases involving them. Organizations that lack accessibility standards face legal consequences. Companies such as Target and institutions like Harvard University have faced penalties of \$6 million and \$1.5 million, respectively (Ref.), due to accessibility issues.

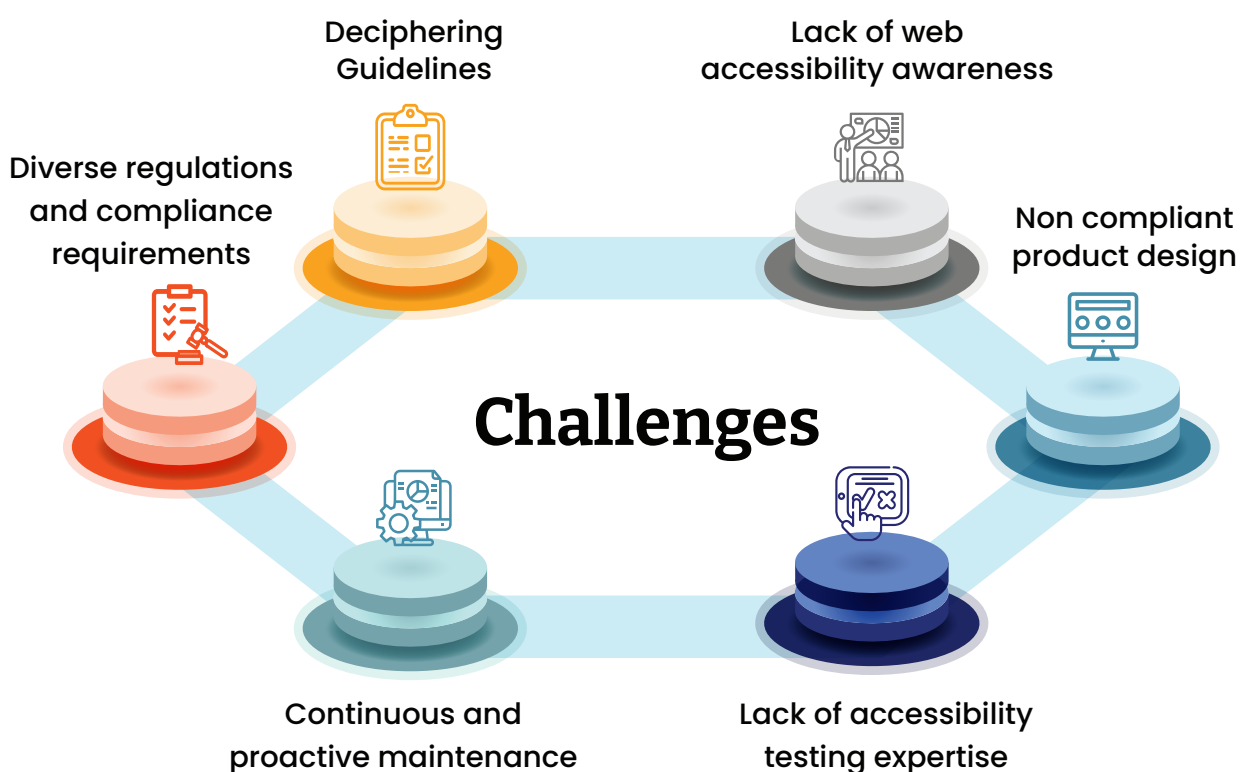


Source: usablenet (Ref.)

Even with litigations around the world increasing, most businesses have been slow in adopting an accessibility strategy. It's estimated that companies without accessible sites are losing \$6.9 billion a year to competitors whose sites are accessible (Ref.).

The Web Content Accessibility Guidelines (WCAG) provide recommendations on how to improve websites. This paper offers strategies for effectively implementing WCAG, promoting inclusive digital forums.

02. Challenges



Deciphering Guidelines

The Web Content Agency Guidelines (WCAG) are broad but can be intricate. They offer a broad spectrum of recommendations for enhancing web content accessibility. They are broadly called P.O.U.R. principles, which translates to Perceivable, Operable, Understandable and Robust. However, their non-technologically specific nature may present interpretation issues. In addition, information on accessibility standards is often scattered, making it difficult for organizations to stay current and develop effective accessibility strategies.

Lack of web accessibility awareness

Many organizations do not have the proper training or knowledge about web accessibility. This difference can lead to a misunderstanding of its importance and effective implementation. Maintaining a dedicated workforce for accessibility is another barrier, making it difficult to consistently prioritize accessibility across web development teams.

Non compliant product design

It is important to integrate web accessibility from the start of the project rather than add to it. Retrofitting existing projects can be challenging and may require design changes which in turn could require functional changes as well. It is important to build a team that understands the accessibility requirements and can address the concerns as early in the development cycle.

Lack of accessibility testing expertise

Accessibility testing is a niche in software testing. Defining its success criteria is complex, involving understanding user needs and defining guidelines. The process may be a subjective judgment about usability for those with disabilities. While tools can identify some accessibility problems, they can overlook context-specific constraints, and it is important to manually test and evaluate adherence and usability.

Continuous and proactive maintenance

Ensuring web accessibility is a continuous commitment. Regular maintenance and checks are needed to ensure that new products continue to be accessible and that technological or functional improvements don't introduce fresh accessibility issues.

Diverse regulations and compliance requirements

Catering to global products means adhering to diverse and varying local regulations. Compliance guidelines differ across countries. For instance, while France follows the RGAA, Germany adheres to BITV guidelines. While RGAA and BITV are guidelines, United States does not have clear guidelines but instead ADA (Americans with disabilities act) to prevent discrimination against people living with disabilities. Compliance to ADA means using WCAG 2.0 AA as a reference. Keeping up with these specific compliance mandates and monitoring changes to local laws can be a formidable task.

03. Our Approach

We recommend a 5-step approach to transforming your non compliant web application to an accessible web application.

Awareness & Training

Awareness should first be gained through mandatory training in web accessibility and WCAG guidelines for product owners, testers, UX designers, and developers. WCAG rules can be flexible, which means there are often multiple ways to solve an accessibility problem. It is therefore important for our team to recognize the flexibilities available while implementing accessibility and understand the importance of goal setting rather than sticking to fixed and specific actions. It's also important to include all people in the user-product development lifecycle here, as accessibility issues can be brought up at any point in your product development.

Objectives of this step are to:

Develop a discerning eye

This involves honing a keen eye for identifying potential barriers to accessibility during the various stages of development. We need to train our team to be able to find accessibility issues on their own. This means being able to look at our website and understand where someone might have trouble using it.

Learn to utilize tools

Equip your team with leading tools like Axe, Screen readers like NVDA and Jaws, and Contrast Checkers. Ensure they're proficient in deploying these tools to identify and rectify accessibility issues swiftly.



Evaluation

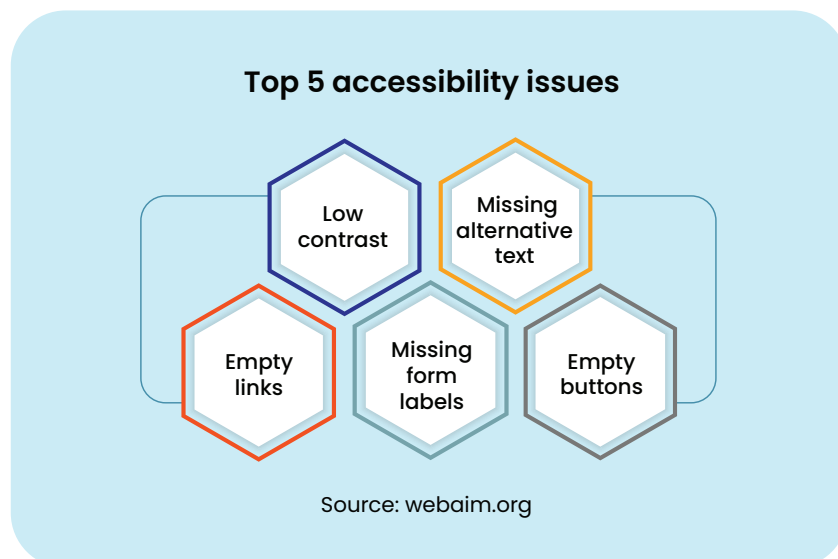
During this phase of our accessibility journey, we perform below activities.

Expert Analysis for Gaps

Focus on the deep analysis of the application using WCAG standards. Create a team of subject matter experts, product owners and quality analysts who are familiar with the application. Their mission is simple: to guide and identify areas where WCAG guidelines are applicable and changes are to be made. This is a manual process driven by the experience of the product and features.

Tool assisted Analysis

Enhance our research with tools other than just functional testing. Our HTML design and compatibility with screen readers will be explored. Please note that we do not review every page at this stage but select pages as examples; this will help us keep this activity time bound and focused. Those same tools will be essential in our execution phase.



Compile guidelines relevant for application

After researching, curate a list of WCAG elements that are particularly relevant to our application. This section clarifies our current access and roadmap ahead.

Refining

During refinement phase we take the issues and curated list of guidelines relevant to the application from the previous phase and perform below activities

① Refinement

Concentrate on honing and rectifying identified challenges. The team will work together to develop customized solutions for each issue, understanding that some may require new designs or functionality changes.

② Brainstorming

Engage in focused discussions with product owners and designers to finalize effective solutions that elevate the user experience.

③ Issue Categorization

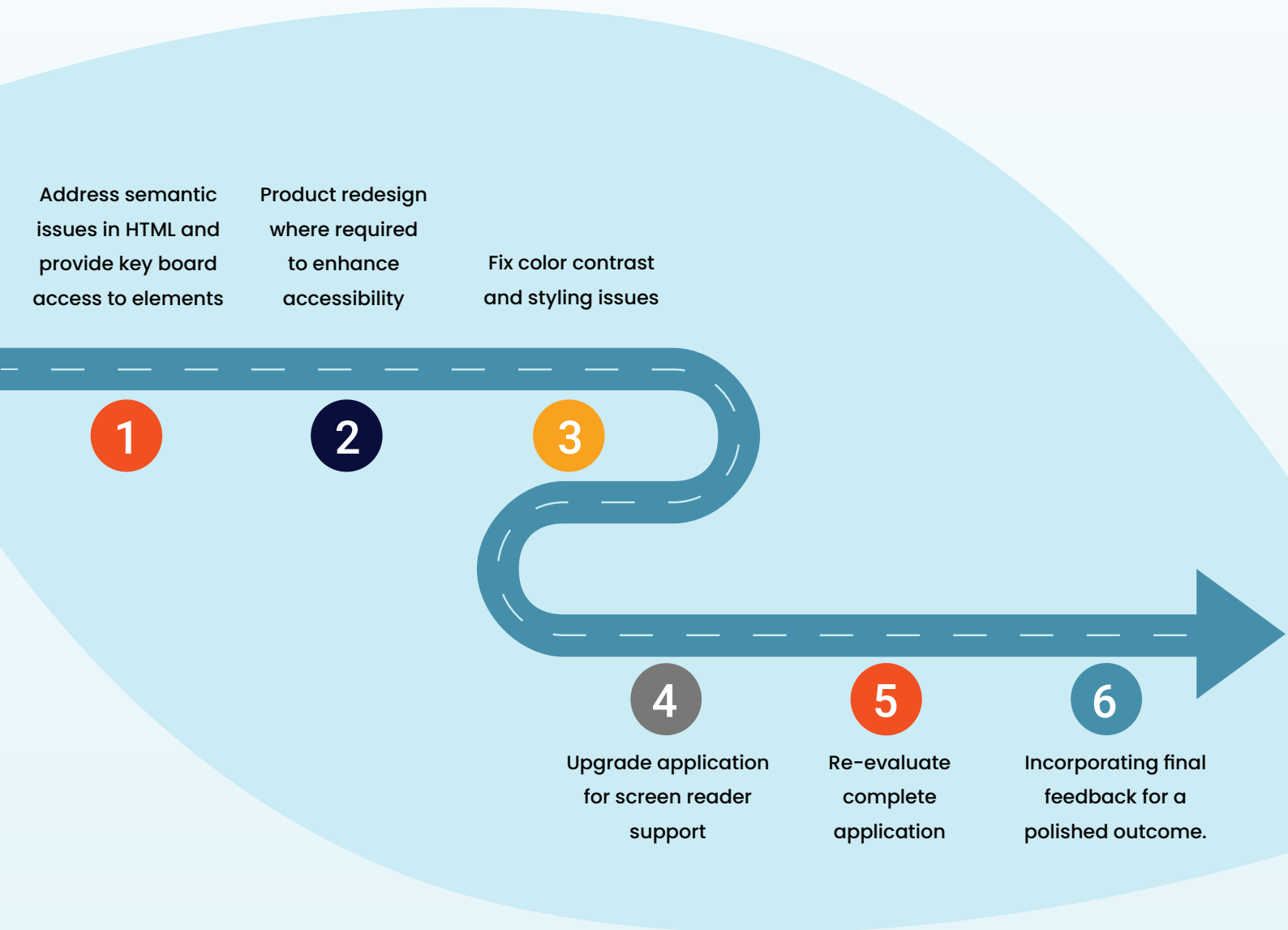
Differentiate between challenges; while we tackle design and functional problems on one front, semantic issues are addressed on a different track.

Planning

When embarking on an accessibility transformation, clarity is paramount. We don't jump in blindly. Instead, we draw insights from our meticulous evaluation and refinement phases. By gauging the project's expanse and depth, we know exactly what awaits.

Our dedicated dialogue with the development teams is pivotal. It ensures that every change, particularly the semantic ones, resonates with the grand picture we envision. We don't leave consistency to chance. We craft concrete guidelines, which are less about rules and more about providing our developers with a compass, guiding them towards a unified solution.

Think of our planning as charting out a map, marked with significant milestones:



But it's not just about a linear journey. We're adept at spotting tasks that can happen concurrently and iteratively, streamlining our process. Our collective experience ensures harmony in execution, with teams working cohesively.

In essence, our planning phase isn't just about setting directions—it's about crafting a strategic, yet adaptable roadmap that aligns with the destination of a universally accessible application.

Execution & Maintenance

The final lap in our accessibility race is not just about speed, but also endurance.

Building Foundations

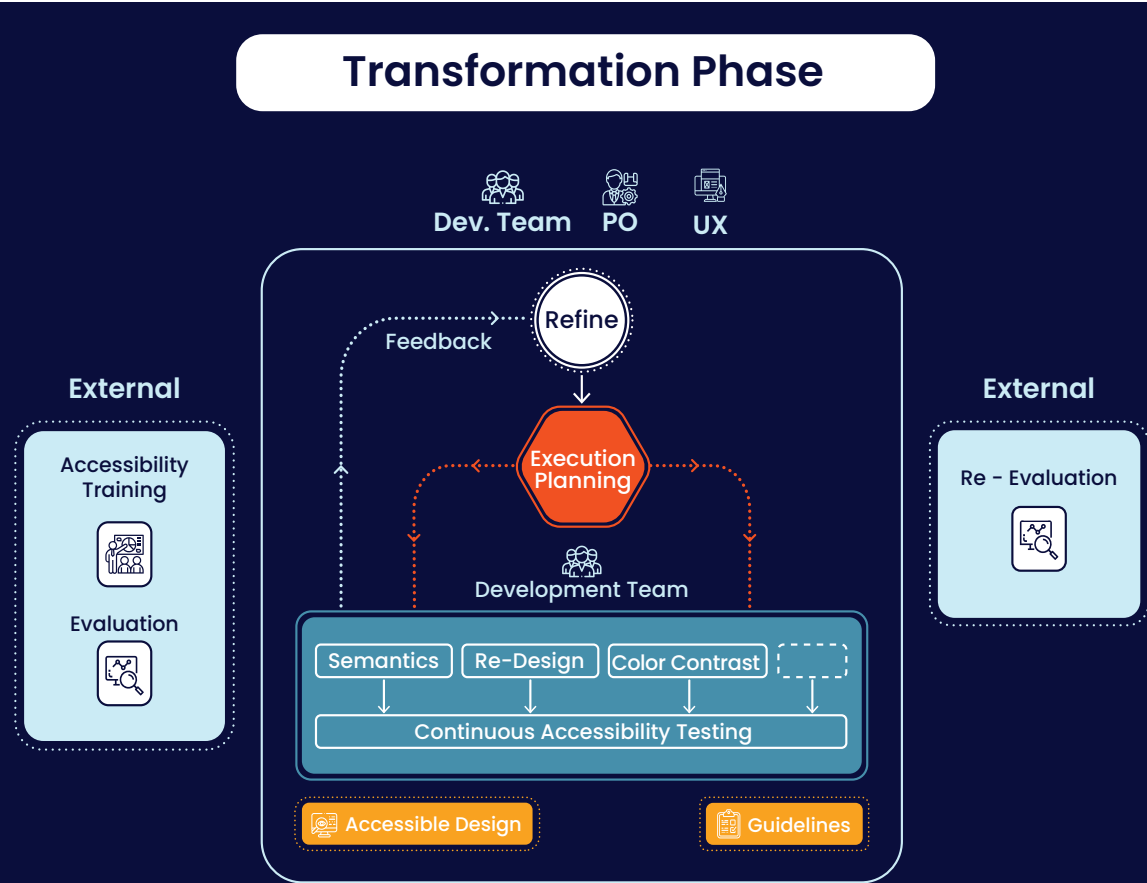
Begin by structuring pages correctly with semantic HTML. The right attributes and elements, like headings and aria-roles, can transform user accessibility instantly. Infuse the team with ARIA knowledge early on, setting the tone for uniformity and efficiency.

Strategic Tackling

While addressing semantics, think parallelly about design enhancements. If certain elements are not accessible now, earmark them for a focused revamp later, rather than a quick fix during semantic fine-tuning which can lead to rework.

Testing and Feedback

Post adjustments, adopt a rigorous testing methodology. Cast a wide net, covering a range of pages to ensure holistic uniformity. Embrace swift, clear feedback loops, empowering developers to correct and testers to discover, not just recheck.



Choosing a Tactic

Your strategy in addressing issues can vary:

- » Perfecting one page fully before moving on.
- » Rectifying a specific issue across all pages.
- » Overhauling components one by one.
- » Tackling critical issues first, followed by others.

Your team's dynamics, ability, time, and resources guide the choice of strategy.

Sustaining Accessibility

Achieving accessibility is half the journey; sustaining it completes the circle. Here is how we keep momentum:

Design Thoughtfully

Every new feature or design change should prioritize accessibility. Document any specific requirements right from ideation.

Develop Conscientiously

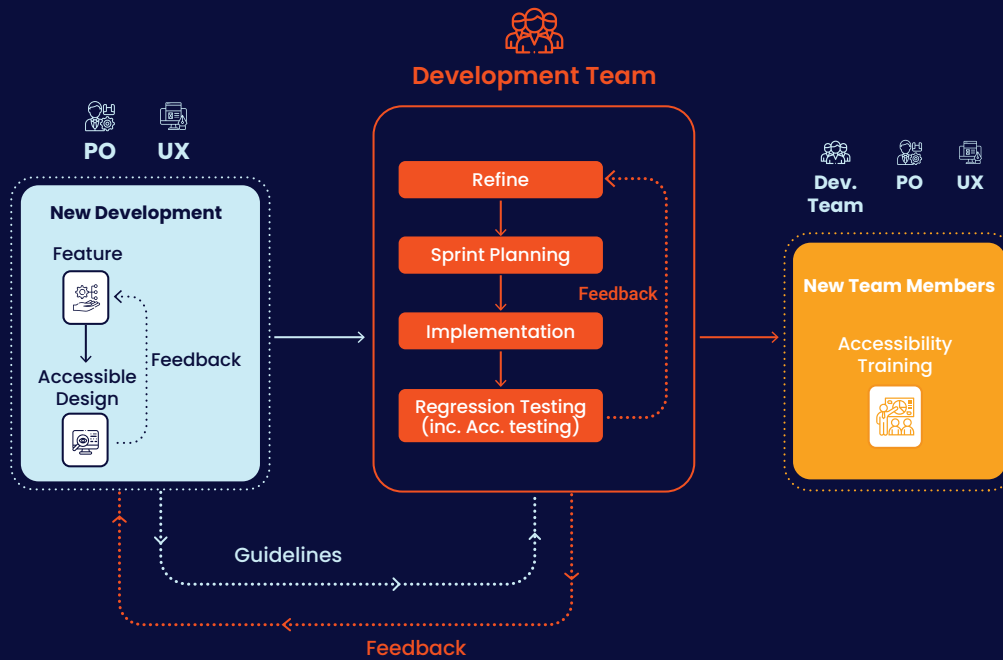
Every development task should be aligned with accessibility norms by the team, consistently confirmed in testing phases.

Train Continuously

Make accessibility a cornerstone in onboarding, ensuring new team members step in with the right mindset.

By integrating these principles, we not only reach our accessibility goals but also ensure we uphold them, today and always.

Maintenance Phase



Success Criteria

Application should meet all the applicable WCAG 2.2 Level A or AA guidelines as per the business goal and compliance requirements. Having an external auditor re-evaluate the application after the implementation is recommended to get additional perspective. We should not forget that regular testing is required to maintain compliance and avoid any penalty. As you can see in the above diagram, way of work adjustment and continuous training can help avoid new issues introduced into the product. Additionally, there may be local compliance requirements for some countries for example, In France, RGAA mandates to have an accessibility declaration on your product website which acts as a help page for users to inform the level of accessibility they can expect, and another conformance claim document for administration with precise level of conformance and the declared and justified derogations.

The customer faced several significant challenges, including but not limited to

Meeting a stringent deadline for achieving conformance to accessibility guidelines.

Coordinating the delivery of a large-scale project involving multiple teams.

Developing a comprehensive testing strategy to ensure accessibility.

Revamping functionalities and features to align with the stated accessibility objectives.



The collaboration with DevOn has yielded numerous benefits for the customer

1

Development of clear accessibility requirements and a well-structured project plan for delivering an accessible product in a phased manner.

2

Establishment of traceability of requirements and documentation of how they are being fulfilled, providing transparency and accountability.

3

Creation and execution of a comprehensive testing strategy to validate the product against the WCAG 2.1 AA recommendations, ensuring high levels of accessibility.

4

Implementation of a process to ensure that new features are developed in compliance with WCAG requirements, ensuring that the product remains accessible even as it evolves over time.

Overall, these efforts have resulted in a product that meets high standards of accessibility and usability, ensuring that the customer can serve a broader range of users and comply with applicable regulations and guidelines.

25+

Number of
Success
Criteria
Identified



200+

Number of
Pages
Tested



150+

Number of
Accessibility
Issues
Resolved



05. Key Takeaways

The Need for Web Accessibility

With 15% of the global population having a disability and only 2.8% of website home pages being accessible, there's a significant need for web accessibility.

Legal Implications

The rising number of lawsuits and regulations related to web accessibility emphasizes the urgency for organizations to comply.

Challenges in Achieving WCAG Compliance

These include understanding the guidelines, a lack of awareness and training, designing with accessibility as a priority, specialized testing, continuous maintenance, and adhering to varying global regulations.

DevOn's Approach to Accessibility

Awareness & Training:

It's crucial to equip teams with the right knowledge and tools.

Evaluation:

A deep dive into applications to pinpoint WCAG alignment needs.

Refinement:

Focus on honing solutions for identified challenges.

Planning:

A detailed roadmap to guide the accessibility journey.

Execution & Maintenance:

A structured approach to build, test, and maintain accessible features.

Real-world Implementation

DevOn successfully aided a B2B telecommunications sector customer in achieving WCAG 2.1 AAA standards, highlighting their capability and systematic approach.

06. Summary

This whitepaper provides in-depth guidance on how to enhance existing web applications to comply with WCAG (Web Content Accessibility Guidelines) With the rapid expansion of the digital landscape, accessibility options for people with disabilities have become very important. A significant portion of the Internet remains inaccessible to this group, creating accessibility gaps. The legal consequences of non-compliance are increasing. However, improving WCAG compliance presents challenges. Understanding guidelines, ensuring proper training, designing with accessibility in mind, testing, maintenance, and compliance can be difficult. DevOn's structured approach includes awareness and training, inspection, maintenance, planning, implementation, and maintenance. This framework is used, as shown in the case study, to effectively aid businesses in achieving and maintaining WCAG compliance.

CONTACT

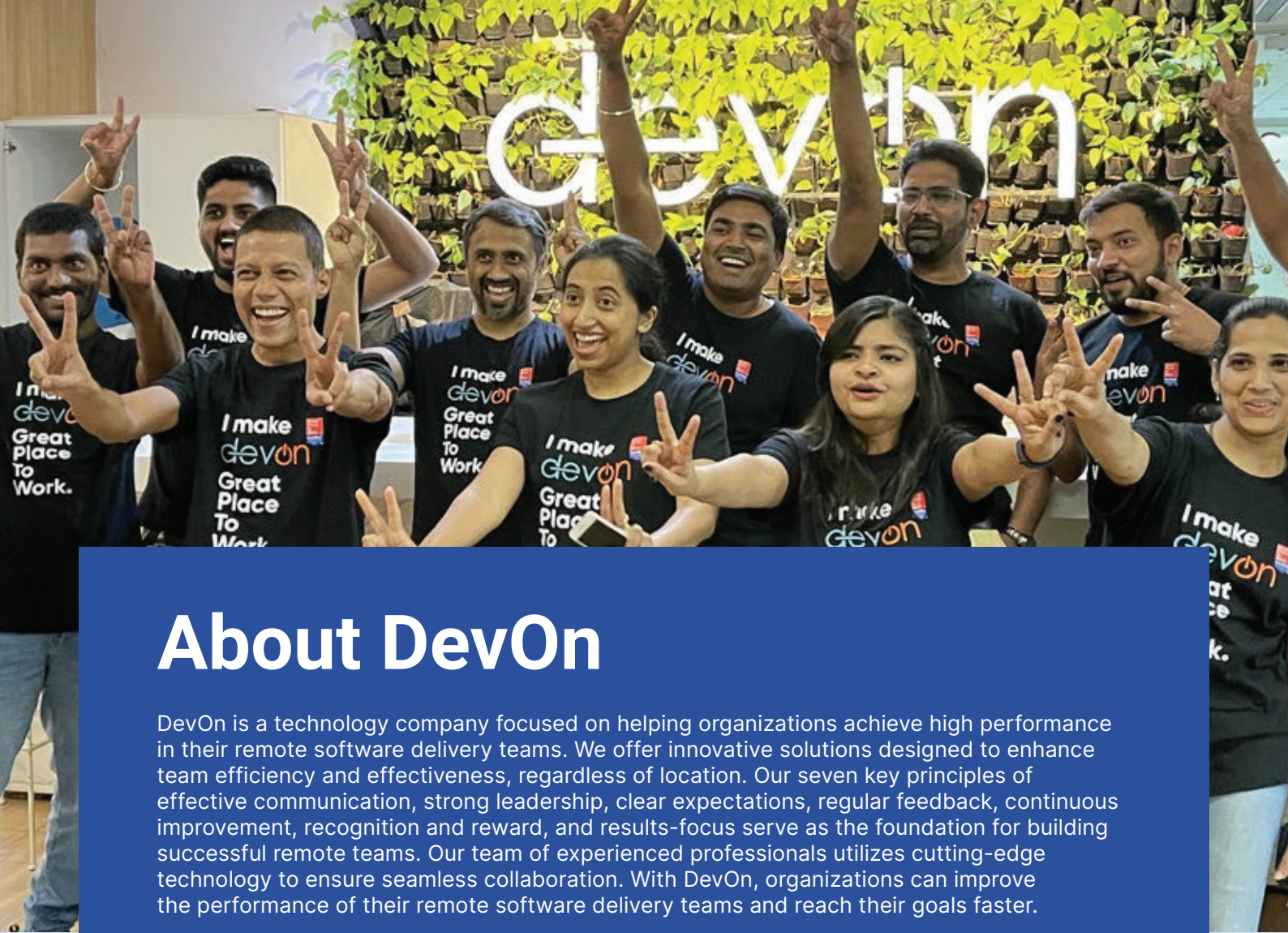


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About DevOn

DevOn is a technology company focused on helping organizations achieve high performance in their remote software delivery teams. We offer innovative solutions designed to enhance team efficiency and effectiveness, regardless of location. Our seven key principles of effective communication, strong leadership, clear expectations, regular feedback, continuous improvement, recognition and reward, and results-focus serve as the foundation for building successful remote teams. Our team of experienced professionals utilizes cutting-edge technology to ensure seamless collaboration. With DevOn, organizations can improve the performance of their remote software delivery teams and reach their goals faster.

Awards & Recognition



3 Times Great Place to Work Certified

Certification based on **Trust Index 94%** – a comprehensive employee survey and culture audit



Top 10 Inspiring Workplaces 2023

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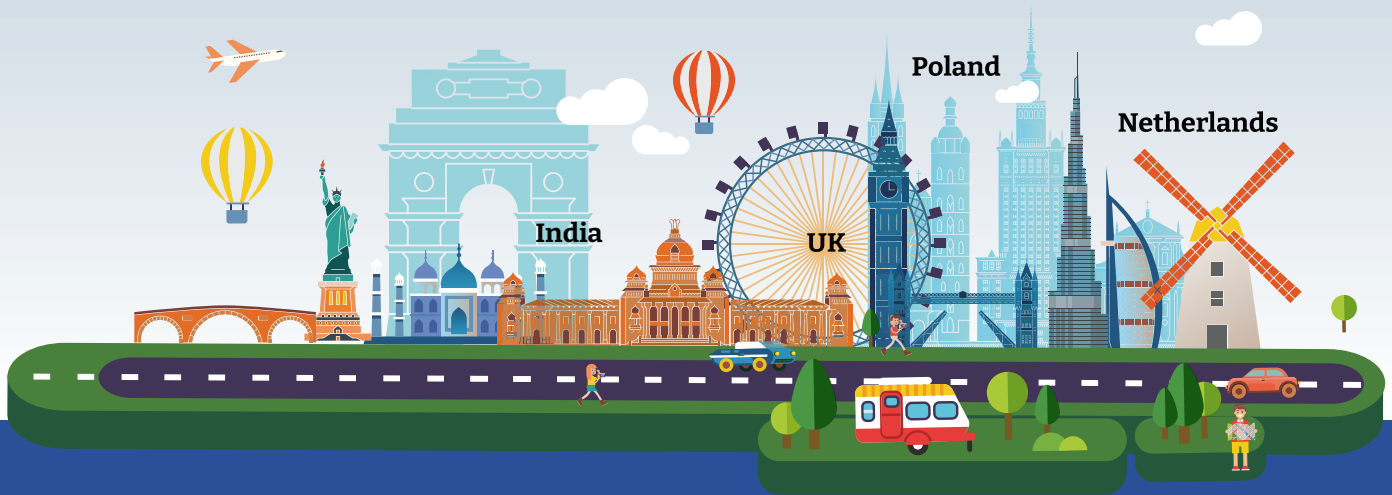
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Speak with one of our experts

Our insights can help you take advantage of change. If you're looking for fresh ideas to address your challenges, please feel free to reach out to us for a quick brainstorm.

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