Innovation

Web Accessibility for Better Business Results

Automating Accessibility Compliance during Web Content Editing

White Paper Series

G3ict

Global Initiative for Inclusive Information and Communication Technologies

A Flagship Advocacy Initiative of the United Nations Global Alliance for ICT and Development
Web Accessibility for Better Business Results

Automating Accessibility Compliance during Web Content Editing

A G3ict Innovation White Paper Series

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Researched in Cooperation with Ephox Corporation

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About G3ict
G3ict is an Advocacy Initiative of the United Nations Global Alliance for ICT and Development, launched in December 2006 in cooperation with the Secretariat for the Convention on the Rights of Persons with Disabilities at UN DESA. Its mission is to facilitate and support the implementation of the dispositions of the Convention on the Rights of Persons with Disabilities promoting e-accessibility and assistive technologies. G3ict participants include industry, the public sector, academia and organizations representing persons with disabilities. G3ict relies on an international network of ICT accessibility experts to develop practical tools, evaluation methods and benchmarks for States Parties and Disabled Persons Organizations to implement policies in support of assistive technologies and e-accessibility. Since inception, G3ict has organized or contributed to more than 85 awareness raising and capacity building programs for policy makers in cooperation with international organizations such as the ITU, UNESCO, UNITAR and the World Bank. G3ict co-produces with ITU the “e-Accessibility Policy Toolkit for Persons with Disabilities” (www.e-accessibilitytoolkit.org) which is widely used around the world by policy makers involved in the implementation of the Convention on the Rights of Persons with Disabilities. For additional information on G3ict, visit www.g3ict.org

G3ict White Paper Innovation Series
The G3ict White Paper Innovation Series documents innovative accessibility solutions and good practices with real world case studies for users and organizations seeking to improve the accessibility of their information technology, applications and services.

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From both a business and a disability rights perspective, this paper describes the value for organizations of adopting techniques to produce accessible web content compliant with global standards. Accessible web contents:

- Protect organizations in light of regulations and potential legal actions
- Enhance users’ experience and the brand consistency of the organization
- Generates better business results by extending the reach and the audience of websites

This has been difficult to achieve to date due to the complexity of regulations coupled with the cost of training web authors to apply those rules consistently. Additionally, a majority of organizations lack the awareness of the business benefits that can be realized by having compliant websites. New technology that can help organizations consistently ensure compliant content in a cost effective approach is highlighted.

Background

Web accessibility is a precondition for all persons with disabilities to enjoy the use of the Internet and of websites. Without it, website producers may involuntarily exclude millions of users from their potential audience. A Forrester Research survey commissioned by Microsoft showed that 57 percent of adult users of Windows in the United States benefit from its accessibility features from simple zooming to text-to-speech functions. Web accessibility benefits visually impaired persons who need to enlarge text, change contrasts or colors, use a screen reader software to listen to a web page; or users who cannot use a mouse and have to rely on alternative input devices; hard of hearing persons who cannot rely on sound output or persons with cognitive or memory impairments who cannot deal with complex or rapid series of input/output.

Businesses and governments alike recognize the imperative to develop and maintain accessible websites and have adopted in increasing numbers the World Wide Web Consortium (W3C) Web Content Accessibility Guidelines (WCAG) which address all types of impairments that may affect users. Yet, the proportion of inaccessible websites remains very high. It is in fact estimated that over 90 percent of websites, including most e-government websites around the world and other essential services are inaccessible. The first indispensable step for web developers is to provide accessible web platforms at the initial stage of designing a website. The technology is widely available, but for a proper implementation, accessibility features must be included in the original requirements of website features.

The second hurdle that needs to be dealt with by web producers is the complexity of accessibility rules and the difficulty to train the millions of users who, every day, create web pages around the world.

Streamlining the Editing of Accessible Web Pages

Streamlining the web editing process of creating accessible web pages has therefore become a key objective for many organizations. Post-editing accessibility checkers help detect accessibility errors and offer solutions. But the process to correct accessibility “errors” can be cumbersome and significantly reduce the productivity of web page producers and many simply are unaware or simply skip it. To avoid loss of productivity for web page editors, checking accessibility “as you type” while developing content is critical.

This G3ict Innovation White Paper is dedicated to presenting the benefits of web accessibility for businesses, and how the accessibility module of EditLive! produced by Ephox Corporation (www.ephox.com) can significantly help streamline the editing of accessible web pages. We appreciate Ephox’s willingness to let us inquire among their customers, development team and third parties so that we could illustrate this White Paper with real world case studies.

Why Web Accessibility Matters?

Global Trends

With the dramatic increase in the number of essential services and sources of information available to citizens over the Web, web accessibility has become a major focus for advocacy organizations, governments, legislators, businesses and international institutions. While a few pioneers took steps as early as the late 1990s, governments and legislators in multiple countries have taken steps to ensure that websites serving the public are made accessible. This trend is gaining significant momentum with disability rights legislation fast expanding around the world.

The Convention of the Rights of Persons with Disabilities (CRPD)
Adopted by the General Assembly of the United Nations in December of 2006, the CRPD clearly recognizes “the importance of accessibility to the physical, social, economic and cultural environment, to health and education and to information and communication, in enabling persons with disabilities to fully enjoy all human rights and fundamental freedoms.” The Convention, opened for signature to States Parties in March of 2007, brought answers to the universal need of full inclusion of persons with disabilities in the community. Signed by more than 153 countries, it has been ratified by 110 States Parties, thus becoming an international law.

Article 9 of the CRPD includes specific directions for States Parties to promote accessibility standards, Universal Design, and, more specifically, to “promote the design, development, production and distribution of accessible information and communications technologies and systems at an early stage, so that these technologies and systems become accessible at minimum cost.” Going further, the CRPD recommends the adoption of Universal Design, “the design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. Universal design shall not exclude assistive devices for particular groups of persons with disabilities where this is needed.”

By these dispositions, the CRPD requires equal access to ICTs for all: “ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems.” The CRPD places a specific emphasis on Internet access, as more and more of daily interaction with society require access to the Web, whether one shops online, requires a birth certificate or researches a paper for school.

The U.S. Accessibility Regulatory Framework

The United States may have the most comprehensive set of legislative tools, notably with the American Disabilities Act and the Section 508 of the Rehabilitation Act of 1973. Section 508 bars the federal government from developing, maintaining, using or procuring electronic and IT goods and services that are not fully accessible to those with disabilities, including employees and members of the public. This includes web design services. Section 508 provides a checklist in binding statutory language, facilitating compliance and monitoring, and binds most states: any state receiving federal funding under the Assistive Technology Act of 1998 must adhere to the standards, and many states have codified the federal law as state law. Finally, any business supplying information and communication goods and services to the government must comply with Section 508, and in fact, many large corporations have adopted the section as their official policy.

Guidelines and National Regulations: One Size Does Not Fit All

Over the last decades, many developed countries have put in place legislation that prevents discrimination on the grounds of disabilities, including the lack of accessibility to information technologies and websites in particular.

A common trend is for nations to support and adopt the World Wide Web Consortium (W3C) Web Content Accessibility Guidelines (WCAG), originally developed in 1999 and updated in 2008. The guidelines provide a ready reference of accessibility principles for websites, web software and website tools, and an easy means of assessing the accessibility of websites. These have been incorporated, either verbatim or in essence, within the policy frameworks of many countries.3

Beyond serving the specific needs of persons with disabilities, making websites compliant to W3C/WAI recommendations also benefits a wide range of users, enhancing the interoperability of applications and devices, including mobile devices and smart phones. W3C accessibility recommendations relate to web content, authoring tools, user agents and mobile web best practices.

These measures take a wide range of forms, from mere policies and guidelines to legislations and ordinances. It is not uncommon to find that many of them restrict their mandate to government websites, although countries like Australia and the United Kingdom extend this to the private sector as well, with significant success and backing from the judiciary.

Users Demographics

According to the World Health Organization (WHO), 15 percent of the world population lives with some form of disability, and for 10 percent of humankind – more than 600 million people – those disabilities are life-altering.4 While the vast majority of persons with disabilities live in developing countries, the United States alone counts more than 54 million persons with disabilities. Those numbers will dramatically increase over the next decades with the general aging of the population: the U.S. Department of Labor estimates that 20 percent of the American population will be over 65-year-old in 2030 (12 percent in 2004), experiencing some limitations in mobility, visual and hearing capabilities, and even some cognitive issues.

As ICTs are now the backbone of a fully functioning world, access to the web has become an imperative for any activity in both developed and developing economies. Websites are now reached through mobile devices, as well as through more conventional computer equipment. Mobile phones, in particular, have become the main communication device in emerging countries, for lack of fixed communications infrastructure. For the first time ever, there are more mobile phones than people on Earth! To reach those populations, with a large disparity in education, websites need to be leaner and easier to navigate.

References:
4. This book can be downloaded at http://g3ict.org/resource_center/publications_and_reports

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Accessible Websites Make Good Business Sense

Expanding Markets, Ensuring Customer Loyalty

Close to 40 percent of non-broadband Internet users are persons with disabilities. While the non-usage can be due to economic reasons, the lack of accessibility of the Internet and websites is often quoted as a factor. But studies show that given the right tools, persons with disabilities are quite ready to become regular users. The same goes for the aging population, whose usage of Internet has more than doubled over the last decade, notably for research on health issues. Still, a majority of older citizens feel that their specific needs are not adequately addressed by the existing web-based services.

Adjustment to the accessibility needs can provide access to new users, and secure continuous usage for the digitally savvy aging population. The present generation of baby boomers, in particular, will have difficulties to accept that potential limitations due to age would restrict its access to technology. This group is tech-friendly, and has significant discretionary spending power to support the cost of adapted technologies. Universal Design gives a competitive edge on the market.

While search engines are dramatically improving, they still cannot identify on a website objects that have not been properly coded. For example, if an image does not have an embedded text/caption, search engines will not track the image, thus limiting search capabilities for users. Conversely, proper coding of images, by inserting alternative text, can optimize the results from search engines. The investment necessary for the coding in this example is just typing in the caption! More generally, the investment necessary for full coding at the development stage can be recouped quite quickly as Search Engine Optimization (SEO) is one of the major expenses for websites audience development.

Case in hand: Legal and General (financial and insurance products), based in the United Kingdom, redesigned its website in cooperation with the Royal National Institute of the Blind. Since the accessible website was launched, the company registered a 30 percent increase in search engine originated traffic, an extra 13,000 visitors a month (including mobile device users), as well as a whopping 90 percent increase in online insurance sales. Ensuring accessibility also reduced page loading time by 75 percent, and support costs as complaints from mobile customers all but disappeared.

A great synergy with mobile apps: there are today more mobile phones than people in the world, and accessibility of websites for mobile devices has become inevitable to secure the largest possible reach to all users. Similarly, making websites accessible for persons with disabilities is an integral part of high quality websites, and in some cases a legal requirement. But most mobile web specialists do not know about design issues for persons with disabilities, and likewise, most web accessibility specialists do not know mobile web design best practices.

Web Accessibility Empowers People

Shawn Lawton Henry, W3C/WAI: “With accessible websites, people with disabilities can do ordinary things: children can learn, teenagers can flirt, adults can make a living, and seniors can manage their stock portfolios, and so on. With the Web, people with disabilities can do more things themselves, without having to rely on others.”

Source: Daily Tekk, February 24, 2012 - Why Web Accessibility Matters and How It Can Benefit Your Business or Website

This report by the One Voice for Accessibility Coalition can be downloaded at: http://www.onevoiceict.org/sites/default/files/Accessible%20ICT%20-%20Benefits%20to%20Business%20and%20Society.pdf
What is largely ignored is the significant overlap between making a website accessible for a mobile device and for persons with disabilities. Users of mobile devices and persons with disabilities experience many similar barriers when interacting with web content. For example, mobile phone users will have a hard time if a website’s navigation requires the use of a mouse because they typically only have an alphanumeric keypad. Similarly, desktop computer users with a motor disability will have a hard time using a website if they cannot use a mouse. Additionally, persons with disabilities may use a mobile device to access the website.

Addressing both accessibility issues can obviously bring important benefits to websites. Furthermore, websites that already comply with W3C/WCAG (guidelines for accessibility for persons with disabilities) are well on their way to respect as well the Mobile Web Best Practices (MWBP) that applies to mobile accessibility. Web content is thus more accessible to everyone regardless of situation, environment, or device, and designing to the guidelines together, instead of separately, can make the process more efficient, as well as make good business sense.

Reducing Legal Exposure

Over the last decades, several legal battles have illustrated the need for industries providing services to the public through websites to offer accessible features. Maybe the most commonly known case in the United States involved the National Federation of the Blind (NFB) suing Target for a non-accessible website for screen access technology. An agreement was reached in 2008 between the parties, where Target committed to take the steps to make the website accessible, under a monitoring of the NFB, with a deadline of February 2009 to become fully accessible. Besides a settlement of $6 million, Target incurred the cost of retrofitting its website. Target has in January 2010 been awarded a Gold Certificate of Compliance by the National Federation of the Blind.

Bank of America, Southwest Airlines, the Olympic Games in Sydney, Australia, the Commonwealth of Pennsylvania, are all but a few examples of legal actions from the disability community to promote equal access to online services. Those examples are more and more indicating the necessity of preventing such costly consequences, by implementing accessible features from inception.

The same is true to the extent that inaccessible websites contribute to employment discrimination (National Federation of the Blind vs. State of Texas for accessibility for state employees).

With the global reach of the Convention on the Rights of Persons with Disabilities, more countries are prone to enforce web accessibility rules. Anticipating those trends today by embedding accessibility methods in website development and maintenance should be a priority for CIOs and Web Masters.

Promoting and Maintaining Strong Brand Image

Core to gaining value from web investments is building and maintaining a powerful and positive brand. Inaccessible websites can create problems with perception of the brand, as well as attract negative press coverage. Accessible websites, on the other hand, not only increase audience reach, but also enhance the perception of the brand: accessible websites demonstrate that organizations are truly inclusive and socially responsible.

Cooperate with Disabled Persons Organizations

Many corporations in the United States have committed to improve accessibility of their websites and applications, and the National Federation of the Blind has awarded its certification to such as General Electric, Merck, Quantum Simulations, etc.

Reaching Out to New Users

NTT-DoCoMo of Japan developed the Raku-Raku line of mobile phones specifically for the older generation (speech-to-text, text-to-speech, one touch programmable buttons, and larger screen). Usage increased dramatically with this product in the 65-year-old+ and gave NTT-DoCoMo the leading market share in this age group. This example could apply to websites. Similarly, the Chinese search engine Baidu offers on its home page an accessible feature to help users to spell the text for their search by giving them options to choose from different Chinese characters without having to draw them.
Implementing Website Accessibility: The Devil Is in the Details

Managing Multiple Sources

Websites in larger organizations and corporations have multiple stakeholders: beyond the development team, most websites that offer services to the public will integrate input from marketing, product development, sales, customer service, public relations, etc. Promoting awareness and training to all web authors on issues of accessibility to persons with disabilities is daunting, maybe impossible for most corporations: too many people to be trained at a cost, personnel turnover resulting in lower productivity, etc. Net result: most input to any organization’s website will not be accessible.

A recent survey by the ATIA (Assistive Technology Industry Association) shows a critical lack of understanding and even awareness of disabilities issues in most organizations. Most applications developers cite a lack of business case for implementing accessibility features, as return on investment is difficult to forecast. Unclear or nonexistent written policies, absence of a clearly assigned responsibility are also factors mentioned in the survey (ATIA survey 2012). One can conclude that accessibility has not yet reached a mainstream status in the conventional corporate structure.

Managing Multiple Guidelines

Though there are many guidelines and legislations, national and international, the complexity of accessibility issues is a major obstacle: the multiplicity of problems to be addressed by website developers to respond to disability needs (visual, hearing, mobility, cognitive) is overwhelming all the more so that there is no standardized response, and no standardized training for developers. As a matter of fact, there is no certificate for e-accessibility training, a situation that many developers deplore (ATIA survey 2012). Conversely, the guidelines and/or legislation addressing web accessibility seem very complex to most developers, and they deplore the lack of clear compliance guidelines and accessibility testing tools.

Also, though W3C/WAI has issued international guidelines, each country might have different sets of standards (see: Web Accessibility Policy Making, An International Perspective, G3ict 2012). It is impossible for web developers and web authors to be aware of each set of national regulations and guidelines, and therefore ensure full accessibility in most countries.

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“Ephox recognized the need for accessibility checking during the creation of web content, instead of fixing it after publication. This capability has saved customers countless hours by not only assuring compliant content, but also training the author during the process.”

Thomas Smith, Vice-President, Ephox Corporation

Do It from the Start

For any organization that has to comply with accessibility regulations, re-assessing websites that are not accessible and outdated is often an eye opener: what are the best options to ensure that both web developers and web content authors can implement those rules, in a flexible, timely and economically viable manner? An Australian government agency did just that when it deployed the ELCOM Content Management System* which came with Ephox’s EditLive! embedded as a module. “As-You-Type” accessibility checking had brought important improvements on the website accessibility, improvements already measured by a considerable enhancement of the navigation by users.

* http://www.elcom.com.au/Products/Features
Ensuring web content is accessible and compliant is a time-consuming process. In most organizations, web compliance is not checked for until after content is already published, therefore wasting time and duplicating effort. Compliance with Section 508 and W3C’s Guidelines requires authoring tools that create and check content while you type—prior to publishing. Organizations that employ automated compliance checking during the authoring process, experience significant increase in author productivity, leading to substantial improvements in the process of making content accessible.

Ephox’s EditLive!: Making Web Accessibility Simple

“Until using Ephox’s EditLive!, customers didn’t realize how easy it was to make their content accessible.”

Thomas Smith, Vice-President, Ephox Corporation

Checking Accessibility “As-You-Type”: A Unique and Innovative Feature

Ephox’s EditLive! (http://editlive.com/accessibility), a widely used web content editor, offers a unique solution: a “check as-you-type” tool for all authors, with simple steps that can be implemented by any non-technical contributor.

Ephox EditLive! will check as you type the proper sizing of text and image, and make sure of the insertion of alternative text. It also checks table accessibility, even on a cell by cell level, and provides the added convenience of a table accessibility wizard for the user to directly create tables with the required features.
An Accessible Interface
Like the content it creates, EditLive!’s user interface is compliant with Section 508 standards for accessibility. Icons, shortcut keys and context-sensitive right-click menus provide alternative access to features also found on drop-down menus.

Internationalize and Localize
EditLive! includes features that allow for increased ease of use internationally. International dictionaries include: English (American and British English), Spanish, French, German, Portuguese, Italian, Danish, Dutch, Finnish, Italian, Norwegian, Swedish and Arabic. EditLive! supports more than 100 different character sets, including Unicode & Right-To-Left text. Localization is automatic for all major languages according to the user’s locale. Help documentation is available in 28 languages.

How It Works
Using the EditLive! accessibility checking while you type is as easy as using a typical spellchecker. As the screen shot (Figure 1) illustrates, the user can easily enable or disable the Accessibility “As-You-Type” from the tools menu. When enabled, accessibility errors are identified by wheelchair icons that are color-coded to reflect the severity of the error.

A yellow colored wheelchair icon indicates a moderate severity error. In Figure 2, the author failed to set column and row headers, and associate cells with the headers. Mousing over the icon results in a brief description of the error, providing the author with insight as what needs to be resolved. To make this even easier, EditLive! includes a Table Wizard which saves significant time by easily making the table accessible during creation.

A red colored wheelchair icon indicates a high severity error. In Figure 3, the author needs to use relative versus absolute units for placement of the table.

Accessibility Report
For a more comprehensive assessment of accessibility guideline compliance, EditLive!’s Accessibility Checker provides a detailed analysis of accessibility errors in the content, and then points the author to resources to help resolve issues. “As-You-Type” accessibility checking makes gauging compliance as easy as spell-checking a document. The author can even customize EditLive! to check for the unique compliance requirements of the organization.
The screen shot (Figure 4) illustrates the ability for the user to set the level of accessibility checking required. The author can specify how and when to show errors, warnings and manual checks, or any combination of these checks. The author can also specify which guidelines to apply when creating the detailed accessibility report. They can include WCAG Priority 1, WCAG Priority 2 and Section 508, or any combination of these guidelines. As these parameters are selected, the check is automatically done, and the report expands or contracts in scope.

For each accessibility error identified, the report shows the Accessibility Guideline Section, and a brief summary of the action required by the author in order to resolve the error. The screen shot (Figure 5) illustrates how as the author selects each error on the report: the section of the content containing the error is highlighted, guiding the author to the exact section of the content that needs to be revised. In addition, in the lower section of the accessibility report pop-up, a more detailed description of the error is provided. Lastly, if the author wishes to read the fine detail of the guideline being violated, he/she can click the URL of the actual guideline text on the web.
In Australia, both the public and private sectors are supposed to implement compliance with WCAG web-accessibility guidelines, though enforcement is still somewhat limited at this time. Nevertheless, ANZ Bank went forward and decided to put in place a “Disability Action Plan” (DAP) addressing physical, as well as web accessibility for the bank’s services. WCAG adherence can also provide access to those with motor skills issues and dyslexia, to the elderly, as well as to the visually impaired.

ANZ Bank Disability Action Plan
As support for the plan grew within the organization, the DAP became a separate unit, so as to better measure the business value of the plan, in terms of customer reach, as well as employment.

ANZ Bank Adopts the “As-You-Type” Accessibility Checking Solution
ANZ Bank uses Ephox’s EditLive! Enterprise Edition in-line accessibility checking to drive WCAG 2 compliance efforts and progress. Currently, it is used by ANZ Bank’s web authors. The bank likes the ability to do accessibility checking “As-You-Type,” with the color coded wheelchair icons indicating identified accessibility compliance errors.

The Ephox accessibility checking solution has helped reducing the number of accessibility errors on the website. In addition to EditLive!’s pre-publication accessibility checking, ANZ Bank uses a post-publication accessibility checking crawler, as well as manual checks to ensure overall compliance.

John Harries, General Manager Australia, ANZ Bank: “ANZ’s Disability Action Plan represents our ongoing commitment to make it easy for people with disabilities – staff, customers and our communities – to use our products and services. As part of this commitment, we are working hard to improve accessibility to electronic banking services. To reflect the needs of the community, we provide accessible web based content for all customers. In turn, this supports our customer value proposition to be the easiest and most empowering bank for customers to deal with.”

ANZ Bank has distributed authors spread across numerous locations. Many of these people perform web content authoring as a small percentage of their job. When the in-line accessibility checking of EditLive! is used, it is very helpful to remind people to correct errors. Given web authoring is a small percentage of the workday for many authors, the ANZ Bank web team is invaluable in providing support and ensuring web accessibility compliance.

A Fast and Effective Turnaround

With a two days training for web authors, ANZ Bank has been able to reduce compliance errors identified post-publication by more than 90 percent since the program began. The site now has an approximate 80 percent WCAG 1.0 AAA score, and using Ephox’s EditLive!, the goal is to work towards WCAG 2.0.

Hamish Mackenzie, Global Accessibility Manager, Online Customer Experience, Australia and New Zealand Banking Group Ltd.: “The ability to run accessibility compliance reports, with option to select the WCAG priority 1 or 2 levels of checking, is of great value. The accessibility features in EditLive! are an invaluable part of our commitment to produce accessible content across our large number of sites and geographical locations. The icons that alert users to accessibility errors are very clear to understand and ensure that our editors are aware of the correct way to produce content that is accessible to everyone.”

“While it is hard to measure in terms of competitiveness, ANZ Bank’s efforts to increase WCAG compliance have resulted in dramatically reduced web accessibility errors, and therefore greater access by the general population.”