A Case for Unifying International Accessibility Standards to EN 301 549

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Introduction

In 2013, the global software industry was estimated at 407.3 billion dollars. This represented a 4.8% increase from the prior year. As more and more essential activities in life are approached with technological solutions, it is an imperative that information technology be available to everyone. Increasingly, throughout the world, a person who builds a digital product -- be it an iPhone mobile software application, a Microsoft Word document, or an HTML website -- will have a set of accessibility requirements that he or she must follow. Increased global regulation brings increased compliance, which in the end means people with disabilities will have access to more software and services than ever before. In the last few years, I have seen a large increase in the body of knowledge around making technology accessible to people with disabilities.

I interpret the core of accessibility to mean that a person can use a piece of technology regardless of his or her current abilities. This usage can be subjectively measured through functional performance criteria, which we use to determine that an application's core tasks can be completed by a person with a disability. However, because this criteria cannot be objectively measured, it must be paired with specific line item requirements that can be measured and reported on in order to define accessibility support. These line item requirements necessitate a large amount of study to understand and accurately report on. Throughout my thirteen years as an accessibility consultant, I have seen very little objective criteria for measuring accessibility. I have been greatly encouraged in the last few years with an increase in consistent measurable accessibility results for the web through the specification of the Web Accessibility Content Guidelines 2.0.

Technology is not only about the web. There are many types of hardware, desktop software, document editing tools, and educational platforms that need to be addressed. The W3C created a taskforce to address how WCAG 2.0 should apply to non-web technology in 2012. The staged goal of this Task Force "was to develop documentation describing how to apply WCAG 2.0 and its principles, guidelines, and success criteria to non-Web Information and Communications Technologies (ICT)." In 2013, the following document was published: "Guidance on Applying WCAG 2.0 to Non-Web Information and Communications Technologies (WCAG2ICT). One key takeaway from this document is that WCAG 2.0 language requires modification to be easily interpreted for non-web technology.

EN 301 549 is the European accessibility standard that guides what can be used for measuring accessibility and its effects on the procurement process. It provides testable criteria that procurers can use to ensure the information technology they want to purchase is accessible. EN 301 549 will be the de facto reporting framework for European nations to institute accessibility criteria into their procurement policy.

Section 508 is the law that dictates US accessibility for federal and many state government agencies, based on technical standards developed by the US Access Board. One of the chief ways that this accessibility law affects change is through mandating procurement officers to purchase the most accessible product when comparing equal information communication technology bids. Section 508 was first established in 1998 and now, 17 years later, the standards are being refreshed. The goal is to harmonize them with the Web Content Accessibility Guidelines 2.0.

I believe that international standards must be unified. I also believe that EN 301 549 is the right model for international accessibility standards. My core reasons are as follows:

- Regional reporting requirements divert resources from solving accessibility issues.

- Requirements that incorporate WCAG 2.0 as written do not account for differences in job roles.
- Country-specific standards cannot take advantage of the purchasing power of the global market.

In this article, I will elaborate on each of these points, and present evidence that there is no material benefit to having accessibility regulations written differently around the world.

Point 1: Regional reporting requirements divert resources from solving accessibility issues.

I own a consulting organization that assists companies with meeting and understanding accessibility standards. As with any consulting project, my clients have a specific budget that they can apply to projects to verify and improve accessibility in their technology. I want their budget to be applied to identifying and fixing accessibility issues. I do not want their budget to be applied to creating various reports that all say the same thing in slightly different ways. I believe the most important thing my clients need to do is make their content work correctly for people with disabilities. My concern is that increased reporting requirements for multiple sets of laws around the world will distract organizations from improving their product's functionality. Instead, they will choose to focus on checking off the various boxes for compliance around the world, at the expense of meaningful progress on accessibility.

As Chief Technology Officer for HiSoftware Inc, I was responsible for managing the team that built checkpoints to ensure proper adherence to accessibility requirements. A checkpoint would take an accessibility requirement and turn it into a testable evaluation that could be applied to information communication technology. It was very common for clients to test with a combination of validations for Section 508 as well as WCAG 2.0. I was also responsible for managing the port of

WCAG 2.0 checkpoints to support the Korean Web Content Accessibility Guidelines 2.0. [Korean Web Content Accessibility Guidelines 2.0](#) (KWCAG 2.0) is very similar to WCAG 2.0, but it has some minor differences. One is Guideline 1.3, called Clarity, which combines WCAG 2.0 Guideline 1.3 (Adaptable) and Guideline 1.4 (Distinguishable). I undertook similar projects with implementing a version of checkpoints to support France's [Référentiel Général d'Accessibilité pour les Administrations](#) and India's [Guidelines for Indian Government Websites](#).

After developing and managing this project, which involved so much redundant information, I could not help but feel that my time would have been better spent focusing on a single set of checkpoints that had the highest accuracy in detecting accessibility non-compliance. My own story as CTO of HiSoftware reflects a similar experience that many will find themselves in if global standards are not unified. Rather than spending time finding real accessibility issues, they would need to spend more resources ensuring reports are properly filled out, and whether or not information is going into the right row or column of a matrix instead of whether or not the product worked for people with disabilities.

I don't believe countries have bad intentions in working to define their own accessibility standards that benefit people with disabilities. There are always areas for improvement, but improvements that are limited to a national level will not affect change in our globalized world. Global standards provide stability and consistency. They are peer-reviewed by a group of experts from around the world, and are not published until broad consent has been achieved on each issue. WCAG 2.0 was the first set of accessibility guidelines to publish a large set of peer-reviewed success and failure techniques to measure accessibility compliance. Before WCAG 2,0, ambiguity in the standards allowed organizations to claim they were more accessible than they truly were. Because the WCAG 2.0 guidelines were so specific about exceptions to the rules, they made it very difficult for an organization to justify non-compliance. Thanks to the great work of the W3C in creating a global set

of guidelines, I have been able to communicate with more authority about what needs to be done by an organization to improve their accessibility.

The work of the W3C has the ability to continue producing new techniques, and to be adapted as technology advances into the future. I worked on the [Accessible Rich Internet Application](#) specification and witnessed first-hand the amount of time and discussion that goes into building a set of requirements collaboratively. It is difficult work, and progress can be slow when taking all feedback into account. But the end result enables clear guidance on techniques for making specific technologies accessible.

I personally don't believe the language of the requirement matters as much as the specific guidance for how to successfully meet the requirement. Helping people find the correct guidance for their specific scenario is where a unified set of accessibility standards and laws around the world can benefit. In today's world, if we don't know the answer to something, we go on a search engine and search for more information. By using the same regulatory text, we ensure that people are searching for and finding information that pertains to the specific issue at hand.

To me, the evidence is clear: If everyone is using the same standards, then mutual understanding of accessibility issues is far more likely, and resolving these issues is far more achievable. By unifying Section 508 with EN 301 549, we could simplify the compliance process for everyone without lowering our standards, and we could do our part to make global accessibility a reality.

Point 2: Requirements that incorporate WCAG 2.0 as written do not account for differences in job roles.

The amount of study required to correctly interpret accessibility requirements is significant and hence successful implementations have lagged. One of my primary contributions to the accessibility

field over the past 13 years has been developing and delivering trainings to organizations on how to successfully build and verify that their information technology is accessible. The goal of many of my trainings has been to impart knowledge to people who may have little (if any) experience with accessibility requirements. The most successful trainings I have taught occurred when the participants were all performing the same job role and were working with the same technology. When this was not the case, my job became more difficult because, realistically, there are certain requirements that only apply based on the type of work someone does. I believe that EN 301 549 addresses this reality directly by providing organized sets of requirements that apply to the type of content being produced.

Often, organizations hand a person responsible for accessibility a stack of papers to internalize and apply. If this person is not given enough time to be trained in proper evaluation, accessibility suffers when this model is used. As an American, I have delivered more trainings on our Section 508 law than any other standard in the world. Section 508 legislation for desktop software includes 12 standards that are summarized in 400 words of legislation. The requirements for web are summarized in 380 words for 16 standards. The brevity of Section 508 leaves it very open to interpretation, and unfortunately makes it very difficult to measure compliance, and to achieve the law's stated goals of influencing organizations to produce more accessible software. On the other hand, WCAG 2.0 is extremely specific in how it measures conformance. For instance, "Techniques for WCAG2" is 727 pages long when rendered as a document. This document is an amazing resource, but care must be taken with it, because if people become afraid of not properly following the requirements, they might not take action at all.

For example, when I have presented to content creators, I have typically found document authors to be the largest audience in an organization, as well as the user population that feels the least capable of understanding and meeting all of the complex requirements, not all of which apply to them. I have seen regulatory requirements with language that was not specific to documents cause confusion

and non-compliance. Based on these experiences, and others I will describe below, I am eager to see accessibility laws be more clearly communicated. I believe the only way to do this is follow the European Union's example and ensure that accessibility requirements are relevant to specific job roles.

A document author within an organization will typically have a liberal arts educational background. These authors are very skilled at producing content that is aesthetically pleasing, grammatically pleasing, informational, and easy to understand. The challenge for these types of people within an organization is that they are often overwhelmed by the technical requirements that are thrown at them as part of their job responsibilities.

Additional requirements or thought exercises placed on content authors will result in less accessible software. Across the board in accessibility requirements, there is not enough differentiation to allow someone to achieve a minimal level of compliance. Microsoft Word has a built-in accessibility checker, and Adobe Acrobat PDF has a built-in accessibility checker.

Content authors benefit from a having a small defined set of requirements. These requirements must be articulated in a manner that speaks directly to the workflow that they use in their day to day work. I often find myself repeating the classic mantra that accessibility is not difficult and can easily be incorporated into one's daily workflow. But this is only true and possible if content authors are required to interpret and understand a small amount of information. For example, if a content author training focused on providing alternative text for images, long descriptions for charts, and meaningful headings for sections of content, we would have a much more accessible world than we have today. Instead, in the current state of the world, we see document authors sitting through multiple 8-hour trainings and being asked to understand a multitude of requirements that do not apply to them.

Developers are typically asked to address accessibility issues by receiving bug reports from trained professionals within their team, or outside consulting agencies that understand how accessibility requirements map to actual implementations. It matters whether or not someone is working on a Google Android mobile application, a Microsoft Word document, or a Java application that communicates to a backend server. When a bug report is sent to a developer, it typically includes information about what the developer needs to do to fix the issue. When developers are just asked to meet WCAG 2.0, it will take more time for them to find the correct solution. Very often, a link will need to be provided to a best practice for how a developer should fix the issue. WCAG 2.0 presents a generic solution that can be applied philosophically to technology of any type: G94: Providing short text alternative for non-text content that serves the same purpose and presents the same information as the non-text content.

In my experience, the best way to get accessibility issues fixed is to provide the most specific guidance possible. For example, if I asked a developer to make her web content include text alternatives for images, I would link to the following Web example: H37: Using alt attributes on img elements. If I asked an Acrobat PDF author to make the images in his text document accessible, I would link to the following example: PDF1: Applying text alternatives to images with the Alt entry in PDF documents. These techniques are reviewed and centrally maintained by the W3C.

If a content author is only responsible for writing documentation within an organization, then they will often become overwhelmed by the many requirements that demand a technical understanding of content. Taking Adobe Acrobat PDF as an example, I have seen many times in trainings that content authors understand the accessibility requirements around text content production, but become much more confused when they're supposed to understand "programmatic access," which requires that someone understand the hierarchy of elements that make up an accessibility tree. I believe that content authors will benefit from having non-applicable requirements removed.

In my experiences working with large organizations, I've consistently found content authors to be the most willing to help and think about their audience. Content authors want to do the right thing, but can become discouraged if they are sidetracked with too much content that is unrelated to their workflow. If the US aligns its accessibility standards with Europe, which uses standards that are relevant and easy to follow for content authors, then the US is enabling content authors to do the most they can to make content accessible. When we narrow the focus of certain accessibility requirements, we make it easier to take action on those requirements. When it's easier to take action, more people do so.

Point 3: Country-specific standards cannot take advantage of the purchasing power of the global market.

In my experience, the two principal reasons organizations have focused on accessibility are to address lawsuits or blocked sales opportunities. I believe strongly that the procurement process drives accessibility, because the benefits to companies that do accessibility well are greater than the penalties to companies that fail to comply. Procurement officers are often the people within an organization that are able to exert the most influence on accessibility purchases in the world. The purpose of many government regulations on accessibility is to empower procurement officers to exert influence over third-party companies, and offer clear business incentives for greater accessibility. Sales opportunities can become blocked when a procurement officer determines that a product does not meet accessibility requirements and will not be usable by employees with disabilities. When a procurement officer tells a salesperson that their product does not support enough accessibility, that sales person will go back to their organization and push the development team to support accessibility.

If no one is available to validate a vendor's claims of accessibility, then it will be very likely that inaccessible software is purchased. In recent years, the pushback from procurement officers in large

US federal agencies has created greater adherence and attention to accessibility requirements. This was not the case a decade ago when very little pushback was encountered for inaccurate or incomplete compliance documentation. Consistent results for accessibility reporting will help each individual accessibility requirement receive greater importance. The motivation to continue improving accessibility and not accept the status quo is certainly emphasized through making accessibility a piece of the competitive landscape. The experience I have seen over the last decade should be a warning to other countries interested in pursuing unique accessibility documentation and reporting requirements.

Making the reporting requirements more consistent would make it easier to determine which products are more accessible than others, thus giving accessible products a clear competitive advantage. If we want accessible products to thrive in today's global marketplace, we need to unify the standards. In my opinion, we would all benefit from unifying the standards to EN 301 549, which has more specific requirements and will thus be a better tool for evaluating accessibility compliance. I believe that EN 301 549 removes ambiguity and forces organizations to be responsible in how they answer compliance claims. Through harmonization of the standards, we ensure that more accurate methods of reporting compliance can be standardized and benchmarked. If every country uses their own set of requirements, numbering systems, and reporting mechanisms, then it will be very difficult for the global accessibility population to benefit from the economy of scale.

With accurate compliance reporting, a procurement officer would be able to apply existing quantitative as well as qualitative analysis to their purchasing decision. Having a standardized mechanism for reporting accessibility would allow the accessibility requirements to gain larger importance and priority in the development lifecycle. If salespeople around the world are blocked from selling to large government accounts, then they will exert more pressure on their internal teams to make the goods and services they sell accessible. The amount of pressure that can be exerted by

the sales team will be greatly weakened if they have to make different arguments for different countries around the world. When the requirements are harmonized across the world, the rationale for avoiding an accessibility bug or issue becomes more difficult to justify. If organizations around the world refuse to purchase a product based on its level of accessibility compliance, it will help ensure that future iterations of that product have accessibility built in from the design phase.

If information can be more streamlined for a procurement officer, it can become more influential. If procurement officers around the world can share information with each other, they will be able to exert greater influence on the market. Imagine having procurement officers from Japan, China, and the United States all logging the same issues to a software provider. That software provider will pay more attention if the same issue is reported multiple times.

When I was a Program Manager at Microsoft, I would have to decide which product features to fix based on a long list of issues. Because procurement officers did not report to a single set of standards, the amount of time it took to process a single issue was a tax on being able to prioritize and fix the right issues. A lot of issue tracking systems have the functionality to mark an item as not fixed, mark an item as not reproduced, or mark an item as a duplicate issue. As an example, let's assume it takes one minute per decision on an issue that has been input into the system. Being able to tell that two issues from different reports are the same issue will ensure that duplicate work (and wasted company time) is not being assigned to multiple developers. The more we can reduce the number of issues that a product manager has to process, the better served an individual user of the product will be. Fewer issues to process on the intake side means that more time can be spent on designing fixes for specific issues. If a specific product can only budget three days for an agile sprint to fix accessibility issues, then the right work will be prioritized because fewer items have to be considered.

A single set of requirements will allow information produced from one testing office in Japan to be harmonized with testing results from the United States. It would be easy for duplicate issues to be

logged against a company if the two accessibility requirements mapped to different standards in each country. But if they all map to the same standards, then a greater degree of accessibility compliance will be achieved, benefitting everyone. And if companies across the world are made to follow the same set of standards, there are greater market incentives for being accessible, because it's easier to compare one company's level of compliance (favorably or unfavorably) with another company.

Conclusion

The arguments in this paper conclude that global standards must be unified, and that EN 301 549 is the best available model for ensuring that accessibility implementations are produced in digital content around the world. If we require developers to understand how the same underlying accessibility issue maps to different sets of standards from around the world, then we are only introducing paperwork instead of meaningful change. Increased reporting requirements mean fewer accessibility requirements will be successfully implemented, which ultimately results in less accessibility for disabled users throughout the world. If we require working professionals to sift through a large number of non-applicable accessibility requirements, we will make it more difficult for them to achieve compliance and participate in important conversations about accessibility. They are likely to decide that compliance is too difficult, and give up. If we do not give procurement officers the comparable and actionable information they need in order to make the best possible decisions, then their influence will be not be properly exerted on the software development process around the world. Some countries may see more accessible software than other countries, but only because issues are being reported in other languages, or content is not understood by the people prioritizing what to fix. I believe strongly that harmonization of Section 508 with EN 301 549 is the key to making accessibility more prevalent and consistent throughout the world in the decade to come.