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Gauging ADA Compliance in the 21st Century Business Internet: A Pilot Study

ABSTRACT

This paper explores issues of accessibility in Web design, including the applicability of various federal statutes such as the Americans with Disabilities Act of 1990 (ADA) and Section 508 of the Rehabilitation Act of 1973. A pilot study of six private sector websites is completed to gauge the effectiveness of current accessibility standards as interpreted from the ADA and Section 508. Evaluating these sites shows that even after 25 years, sites still have accessibility issues.

Keywords: web accessibility, Americans with Disabilities Act, ADA, web design, accessibility standards, WCAG 2.0, HTML Section 508 checklist

INTRODUCTION

The Americans with Disabilities Act of 1990 (ADA) created a legal incentive for businesses to stop discriminating against people with disabilities. Building off civil rights legislation banning discrimination based on race, sex and ethnicity, United States' lawmakers sought to extend protections to a newly-protected class of citizens consisting of people who have a physical, mental and/or emotional disability, people who've contracted contagious diseases and those who may age into a disability. Counted together, this new class of people comprises the country's largest minority group (Brault, 2012; Wentz, 2015). However, drafters of the ADA did not foresee the technological revolution of the Internet Age and how it would transform commerce in the 21st Century. These regulations created for a brick and mortar world are not easily adapted to a virtual environment.

As so much of the world's business is transacted online, it is time to assess how the private sector is traversing an uncertain regulatory environment to engage with the disability community and develop an economy that serves all people with respect and dignity.

BRIEF REVIEW OF THE LITERATURE

As the United States' and world economies increasingly migrate to the Internet, online access to information and commerce is a more necessary part of life, but equitable access to the World Wide Web is not a right. And despite the framework of U.S. regulations meant to level the playing field for Americans who have a disability, the technological revolution of the late 20th and early 21st Century excludes many Americans (Jaeger, 2011).

The United States Census Bureau estimates that some 56.7 million Americans have some form of disability—that's roughly 19 percent of the population—making persons with a disability the largest minority group in the country (Brault, 2012; Wentz, 2015). As a share of the consumer base, Americans who have a disability represent roughly \$200 billion in purchasing power (Brault, 2012). Therefore, it is incumbent on businesses to not overlook this significant portion of the U.S. population when devising their strategy for growing

their business online. One of the more perplexing aspects of the inequitable development of the modern information economy is not simply that people are being excluded from it, but that the world may never realize the potential for evolution and innovation that could be contributed by any one of these excluded individuals and/or groups.

The American with Disabilities Act and its Predecessors

In the United States, the effort to extend protections to people with disabilities is a continuation of the civil rights movement. The Civil Rights Act of 1964 put in place protections from discrimination based on race, color, religion, sex and ethnicity, but it did not recognize discrimination based on a disability.

In the years following the implementation of the Civil Rights Act, disability rights advocates began lobbying government for protections for people with disabilities. The United States government first sought to outlaw discrimination within its own ranks and in programming funded with federal funds with the Rehabilitation Act of 1973. Signed into law by President Richard Nixon, the Rehabilitation Act mandates affirmative action and nondiscrimination by the federal government and federal contractors. Section 504 of the Rehabilitation Act extended those protections to all people with a disability and in doing so, created a protected status for all people with any disability (Mayerson, 1992). Legislators amended the Rehabilitation Act in 1986 to ensure that all electronic and information technology (EIT) published and used by the federal government would be accessible to anyone, regardless of ability (“IT Accessibility Laws and Policies | Section508.gov,” n.d.).

Currently, the federal government utilizes Web Content Accessibility Guidelines (WCAG) put forth by the World Wide Web Consortium to help federal agencies ensure their online publications, tools and resource are accessible to people, regardless of any disability (Digital Communications Division (DCD), 2008). The Department of Health and Human Services maintains an online checklist to walk web designers through each aspect of Section 508 compliance.

Sections 504 and 508 of the Rehabilitation Act of 1973 are landmark pieces of legislation in the search for equality for people with a disability. They gather all people with any disability together as a single class of people and they identify the “exclusion and segregation of people with disabilities...as discrimination” (Mayerson, 1992). As it is updated, Section 508 of the Rehabilitation Act continues to offer guidelines on how to develop EIT that meets the needs of people with a range of disabilities (Digital Communications Division (DCD), 2008). But the Rehabilitation Act only regulates the actions of the federal government and federal contractors. It has minimal effect on the states, local governments (Shamma, 2017) and the private sector. A 2005 study (White, Goette, & Young, 2005) measured the accessibility of U.S. state government web site home pages and found that 30.6% did not meet WCAG Priority 1, 97.96% did not meet Priority 2, and 100% did not meet Priority 3 accessibility guidelines.

Disabilities advocates continued through the 1970s and '80s to pressure government to build off of the Rehabilitation Act toward a law that would extend protections in the private sector for people with disabilities. President George H.W. Bush signed into law the Americans with Disabilities Act of 1990. This landmark piece of legislation stipulates:

No individual shall be discriminated against on the basis of disability in the full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations of any place of public accommodation by any person who owns, leases (or leases to), or operates a place of public accommodation (US Government, 1990).

However, the Americans with Disabilities Act (ADA) regulates the world as it was in 1990, it was not forward thinking so as to intuit the revolutionary changes of the Internet Age.

Ambiguities in the Americans with Disabilities Act

The ADA regulates the world as it exists in brick and mortar. Unlike the Rehabilitation Act of 1973, which was amended as recently as 2018 to maintain the validity of its Section 508 guidelines, it has been up to the courts to decide how the ADA is interpreted in virtual spaces. Federal courts throughout the United States have made defining “public accommodations” the crux of arguments determining the applicability of ADA to how businesses operate on the Internet (Podlas, 2015).

The ADA reads “No individual shall be discriminated against ... in the full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations of any place of public accommodation...” (US Government, 1990). In the case *Carparts Distribution Center v. Automotive Wholesaler’s Association of New England*, The United States’ Court of Appeals for the First Circuit in Boston ruled that it was irrelevant where a customer sought service, online or in a physical location (Podlas, 2015). Three years later, the United States Court of Appeals for the Sixth District would rule in *Parker v. Metropolitan Life Ins. Co.* that businesses had to include an actual physical place in order to be obligated under ADA regulations (Podlas, 2015).

Federal policymakers are aware of the need to clarify the ADA for the Internet Age. In 2010, the United States Justice Department Civil Rights Division published an Advance Notice of Proposed Rulemaking in the Federal Register seeking input to help the agency craft “a clear requirement that provides the disability community consistent access to Web sites and covered entities clear guidance on what is required under the ADA” (United States Government, 2010).

In the absence of clear guidance from the federal government about what types of websites must meet which accessibility standards, businesses and the web design community look to the patchwork of court cases to determine whether or not they build websites that consider accessibility in the project design. That approach to compliance can be costly. The ADA allows litigation as a corrective measure against businesses that fail to make their websites or online services accessible to people who have disabilities. In the years leading

up to the publication of this research proposal, the number of ADA website compliance lawsuits has been increasing year over year (Limitone, 2018; “ADA Website Compliance Lawsuits: Recent and High-Profile,” n.d.).

WHATEVER HAPPENED TO THE DREAM?

For a communication technology created to “allow everyone, everywhere to share information, access opportunities, and collaborate across geographic and cultural boundaries,” (Berners-Lee, 2017), the punitive consequences of ADA compliance litigation confuse the true cost of a technological environment that stifles exploration and innovation rather than fosters it.

A generation removed from its simple-text origins, the Internet is in danger of becoming a digital analog of the world it was invented to disrupt. “For persons with disabilities, unless technological design and implementation meaningfully focus on inclusion, the Internet may become a new means of increased marginalization in society” (Jaeger, 2011).

THE PILOT STUDY

The evolving aesthetic of web design moves too fast for regulations created for the brick-and-mortar business world of the 20th Century. But litigation, both legitimate, advocacy-based lawsuits and those meant to exploit this legal grey area, is clipping the wings of businesses that remain unaware of ADA guidelines until it is too late (Limitone, 2018). As the number of ADA lawsuits continues to grow year after year, it is time to compare corporate web design practice against ADA/Section 508 regulations to understand the state of accessibility across the web.

This research reviewed a cross section of corporate websites to gauge whether or not, and, if so, to what extent, businesses have created websites that are accommodating the needs of people with disabilities. The researchers utilized a quantitative approach to identify, catalogue, and describe the ways that organizations are meeting the needs of people with disabilities and the ways they are failing to do so. Researchers looked for patterns across the sample findings gleaned from the pilot study.

Researchers checked company home pages for features that pose problems for audience members who may have a visual or cognitive disability or other impairment. Home pages are the entrance to the site so if the home page is not accessible, the argument can easily be made that the rest of the site is not accessible. The study used the U.S. Department of Health and Human Service’s HTML 508 Checklist (Digital Communications Division (DCD), 2008) to identify, categorize, and record features that could challenge some users. The HTML 508 Checklist is a 68-point checklist covering 11 different website features. Researchers created a new checklist for each business’ website and compared and recorded the different issues presented by each website.

This project required researchers to manually examine and identify issues that fail to meet WCAG 2.0 requirements. They were aided by open access tools that are readily available

online. The WAVE Browser Extension is a free web browser extension for the Google Chrome and Mozilla Firefox web browsers that allows users to navigate to any site and activate a visual overlay identifying accessibility issues and infractions (“WAVE Chrome & Firefox Extensions,” n.d.). In addition to the HTML 508 Checklist and WAVE Browser extension, researchers utilized a screen-reading software to hear website text and alternative text for syntax, accuracy and logical composition. NVDA—NonVisual Desktop Access—is an open-source screen reader for the Windows operating system (“About NV Access,” 2017). Researchers used this tool to experience websites the same way as a person who has a visual impairment.

Researchers adapted the HTML 508 Checklist into a spreadsheet to record the issues present in each website. In this smaller proof of concept study, researchers used a spreadsheet to keep track of and tabulate results. The level of detail needed to complete the spreadsheets required multiple hours to examine each site. For this reason, only six companies were evaluated in the pilot study.

RESULTS

This study took a descriptive approach to surveying the state of the industry in web design for business. Researchers looked for and catalogued the ways individual websites failed to meet WCAG 2.0 guidelines as listed in the HTML 508 Checklist. The individual website reviews resulted in a report about each site. Researchers aggregated the issues collected in individual reports to communicate broader findings about accessibility and web design (Appendix B).

Highlights from the six companies included the following. General visual checks showed that 33% did not have text that could be resized up to 200% without problems in readability. Half of the sites did not have consistent navigation. Inspection of the code showed that no site could be read logically when stylesheets were disabled. When tabbing through the page, half the sites did not clearly show where the focus was nor tab in a logical order.

When reviewing color, no site had a contrast ratio of 4.5:1 or greater regardless of the text size. Half of the sites did not even have alt tags on all their images and only one site had alt tags that actually conveyed the same information as the image. Most sites did not do a good job in regards to accessibility concerning semantic structure. Only one site performed well when looking at form field accessibility issues. Again, only one site did a good job in relation to elements used in dynamic content.

When using the WAVE tool, two sites produced no errors while all the others had one or more errors in at least four areas. When using the AXE Developer plug in to evaluate each site, every site had errors in five or more areas.

CONCLUSION AND NEXT STEPS

While six companies are a small group to study, the researchers have enough information to review the checklist to determine which questions are most important. There is also an

indication that no errors in the WAVE review does not indicate full accessibility has been achieved. The next phase of the research will use a shortened version of the accessibility checklist in order to attempt to reduce the amount of time needed to review each site. Using the spreadsheet to record this information for six companies worked, but a full study of a large group of organizations' websites will require a robust tracking solution able to query results and present information from multiple sites.

In fall 2018, the state of the industry in regards to accessible web design seems to be one of noncompliance (Limitone, 2018; "ADA Website Compliance Lawsuits: Recent and High-Profile," n.d.). Although lawsuits targeting businesses with ADA noncompliant websites are coming more regularly and that trend is garnering some media coverage, the issue is not generating enough press to rise to the level of other technology issues like cyber security. Companies that have past and outstanding lawsuits alleging noncompliance with ADA will have made some efforts to address some issues on their site and will be in better standing than industry peers that are yet-to-be taken to court over accessibility issues.

In response to the questions about the business case for implementing accessible web design principles in a company's website, the most compelling argument to make is that not designing a website with accessibility in mind could result in costly litigation in addition to the cost of optimizing or completely redesigning the site in the case of a lawsuit. Although there is a lot of uncertainty about the need of implementing accessible design for all audiences, past U.S. administrations have sought to champion the right of all people, regardless of ability, to have equitable access to all aspects of public and private life.

But, perhaps, a more compelling business argument is the potential for unlocking the estimated \$200 billion in consumer spending by people with a disability (Brault, 2012). Roughly one in five Americans has a disability of some kind (Brault, 2012; Wentz, 2015). That means any area of the economy could capture a larger section of their potential market by ensuring all people have access to their web presence.

Many Content Management Systems bake ADA compliance into their software, making accessibility possible through thoughtful design and follow-through. Once initial site ideation is complete, content managers must continue to practice accessibility by adding content that maintains accessibility standards, especially in frequent trouble spots like alternative text for links and images. Some Search Engine Optimizations, such as loading alternative text for images with jargon and buzzwords can create illogical text for screen readers. And, picture-laden sites that flash frequently between images can infringe upon accessibility guidelines.

It is difficult to provide a cost analysis for implementing accessibility guidelines for web design as the extent to which a business must alter a site will differ from site to site. Nick Goebel, technical director and business owner of local web design firm Goebel Media, said their company charges anywhere from \$3,000 and \$10,000 to reconfigure and optimize an existing website to comply with the HTML 508 Checklist. In his experience, it is much more cost effective to develop a new site that complies with Section 508 than to retool a site that does not comply. Therefore, it is advisable that businesses begin their next website

project with accessibility in mind from the beginning, rather than try to reconfigure a site for greater inclusivity at a later date.

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APPENDIX A - DESIGNING THE REVIEW METHOD

When evaluating the website, multiple tabs were opened with the site so it could be seen: 1) a tab with the website in its normal state, 2) a tab with the WAVE accessibility evaluation tool listing errors, issues and features, 3) the source code of the site (generally accessible in the view menu pull down), and 4) a tab with the website open and the developer tools panel open so that individual elements can be inspected.

The Google Chrome web browser was used to complete this proof of concept exercise. WAVE (<https://chrome.google.com/webstore/detail/wave-evaluation-tool/jbbplnpkjmmeebjpijfdlgcdilcofh?hl=en-US>) was installed, and Axe (<https://chrome.google.com/webstore/detail/axe/lhdoppojpmngadmndnejejfpokejbdd?hl=en-US>) accessibility plugins were used to identify accessibility issues and errors.

The HTML Section 508 Checklist (<https://www.hhs.gov/web/section-508/making-files-accessible/checklist/html/index.html>) was opened in a separate window. Many times the links describing the specific checklist items were opened as well. Additionally, it was helpful to reference the w3schools html tutorial (<https://www.w3schools.com/html/default.asp>) to find examples of html elements researchers were not familiar with.

Using the Find command inside the website's source code helped identify and locate features and issues directly related to the html coding.

Google Developers (<https://developers.google.com/web/>) has several pages dedicated to accessibility issues for web design (<https://developers.google.com/web/fundamentals/accessibility/>). Most importantly, the series includes a page on conducting an accessibility review (<https://developers.google.com/web/fundamentals/accessibility/how-to-review>).

Contributor Rob Dodson created a series of videos that address different accessible design concepts. Two invaluable videos include the Voice Over (native screen reader program for Mac) tutorial (<https://www.youtube.com/watch?v=5R-6WvAihms&list=PLNYkxOF6rcICWx0C9LVWWVqvHIYJyqw7g&index=25&t=0s>) and the NVDA (open source screen reader for Windows) tutorial (https://youtu.be/Jao3s_CwdRU)

APPENDIX B – COMBINED COMPANY INFORMATION

	1	2	3	4	5	6
Company:	1	2	3	4	5	6
Date Evaluated:	Feb-19	Feb-19	Feb-19	Feb-19	1/25/2019	1/23/19
Section A: General Visual Checks						
Is the site free from content that flashes more than 3 times per second?	Yes	Yes	Yes	Yes	Yes	Yes
Can all text be resized up to 200% without degrading quality/understandability?	Yes	Yes	No	Yes	Yes	No
Is there more than one way to locate a web page? (Site Search, Site Map, etc.)	Yes	Yes	Yes	Yes	Yes	Yes
Is the order of navigational elements consistent across the site?	Yes	No	Yes	No	No	No
Can auto updating, moving, blinking, and scrolling content be paused or adjusted?	NA	Yes	No	Yes	No	NA
Are all site controlled documents (PDF, Word, etc) fully accessible or have a conforming alternate version ?	NA	NA	Unk	Yes	UNK	Unk
If there are any time limits on interacting with content, can they be turned off, adjusted, or extended?	NA	NA	Unk	No	UNK	Unk
Are operational instructions that rely on sensory characteristics avoided? (Ex. Click the square, blue button to continue)	NA	Unk	Unk	Unk	No	No
Is the site free from pages that re-direct after a timeout?	Yes	Yes	No	Unk	Unk	Unk
Are elements with the same functionality consistently identified across pages?	Yes	No	No	No	No	Unk/No
Do headings accurately describe the content they visually define?	Yes	Yes	Yes	Yes	Yes	Yes
Section B: General Code Inspection						
Is the default language of the page set?	Yes	Yes	Yes	Yes	Yes	Yes
Has the language been properly set for foreign words or phrases?	Yes	Yes	Yes	Yes	Yes	Yes
Is the page free from major errors defined in W3 Failure #70 when run against an HTML validator?	Unk	Unk	Yes	No	No	No
Are duplicate ID values on the same page avoided?	No	No	No	No	No	No
With styles disabled, is the reading order of the content logical?	No	No	No	No	No	No
Do all frames have a title attribute that accurately defines the content?	Yes	No	NA	No	No	NA

Does the page have a title attribute that accurately defines the content?	Yes	No	Yes	Yes	Yes	Yes
Does content intended to be accessible by assistive technology refrain from using display:none or aria-hidden=true?	No	NA	No	No	No	No
If ARIA is present, does the ARIA coding both meet ARIA specifications and give an accurate representation of the content?	Yes	Unk	No	No	No	No
Are Fieldset tags only used for form fields? (Not to make a box around a piece of content)?	Unk	No	Yes	Yes	No	Yes
Section C: Keyboard Navigation						
Are all elements that can be operated by a mouse also able to be operated by keyboard?	Yes	Yes	Yes	Yes	Yes	No
When tabbing through the page, do all elements have a clear visual indication that they have focus?	Yes	No	Yes	No	Yes	No
When tabbing the page, are keyboard traps avoided?	Yes	No	Yes	Yes	Yes	Yes
Is the tab order of the page logical?	Yes	No	Yes	No	Yes	No
When tabbing through the page, are changes of context avoided when an element receives focus?	Yes	No	Yes	Yes	Yes	Yes
Is there a method to bypass blocks of repetitive content (such as navigation)?	Unk	Unk	No	No	No	No
Section D: Sites Containing Color						
Is information conveyed by methods other than color alone?	Yes	Yes	Yes	Yes	Yes	Yes
Does all text (with the exception of logos) have a contrast ratio of 4.5:1 or greater no matter the font size?	No	No	No	No	No	No
Section E: Sites Containing Links						
Are links distinguished by a method other than color?	Yes	Yes	Yes	No	Yes	Yes
Can all link text be understood out of context? If not, does generic link have sufficient content?	Yes	Yes	Yes	Yes	No	No
Do linked images either have an empty alt tag and link text, or no link text and appropriate alt text?	No	No	Yes	No	Yes	Yes
Section F: Sites Containing Images						
Do all images have an alt attribute?	Yes	No	Yes	No	Yes	No
Do all images conveying information have alt text that provides the same level of understanding a visual user would gain?	Yes	No	No	No	No	No
Do all decorative images have an empty alt tag (alt="") or are included via the CSS?	Yes	Unk	No	No	No	No
Is the CSS free from any images conveying information that do not have a text alternative?	Unk	Unk	Unk	Unk	Yes	Unk

Do complex images have an alternate accessible means of understanding?	NA	Unk	Yes	Yes	No	No
Is the page free from images of text? (Picture of an informational table, screenshot of text from another source, etc)	Yes	Yes	No	No	No	No
Section G: Sites Containing Audio/Video						
Do all audio only or video only (video without any sound) files have an accurate transcript?	NA	NA	NA	NA	NA	NA
Do all videos have accurate and synchronized captions?	NA	NA	NA	No	NA	NA
Are there any informational parts of the video that require audio description to be understood by users with limited sight and if so, is a second version with audio description available	NA	NA	NA	No	NA	NA
Is there a way to turn off sound that automatically plays for more than 3 seconds?	NA	NA	NA	NA	NA	NA
Section H: Sites Containing Tables						
If layout tables are used, is data table markup (Summary, TH, ID, Headers) avoided?	Yes	NA	NA	NA	NA	NA
If layout tables are used, is the intended order of the content intact?	Yes	NA	NA	NA	NA	NA
Are data tables implemented with data table coding?	NA	NA	NA	NA	NA	NA
Do all header cells utilize the TH tag? Do all data cells utilize the TD tag?	NA	NA	NA	NA	NA	NA
Do all Header cells contain text?	No	NA	NA	NA	NA	NA
Do data tables with 1 set of both column and row headers appropriately use scope to associate to data cells?	NA	NA	NA	NA	NA	NA
Do data tables with more than 1 set of column and/or row headers appropriately use id/headers to associate to data cells?	NA	NA	NA	NA	NA	NA
Section I: Sites Containing Semantic Structure						
Are all visual bulleted and numbered lists correctly coded with HTML list tags?	No	Yes	No	No	No	NA
Are visual headings correctly coded with HTML heading tags? (<h1>, <h2>, etc)	Yes	Yes	Yes	Yes	Yes	Yes
Do heading tags follow a logical hierarchical progression?	Yes	Yes	No	No	No	No
Are heading tags only used on text that defines a section of content?	Yes	No	No	No	No	No
Is emphasized or special text correctly coded with HTML heading tags? (, , <sup>, etc)	Unk	Unk	Unk	NA	NA	NA
Section J: Sites Containing Forms						
Are all form fields correctly coded with descriptive and accurate labels?	No	No	Yes	No	No	No

Do grouped form fields have correctly coded fieldset and legend tags?	No	No	Yes	No	NA	NA
Are form validation errors clear and accurately identified in text?	No	No	NA	No	NA	NA
Is the form free of making a selection when attempting to navigate the options? (only submits when user makes a selection)	Yes	No	NA	No	NA	NA
Are Orphan label tags avoided?	No	Yes	Yes	No	NA	Yes
Section K: Sites Containing Common Elements/Dynamic Content						
Is the role of an element (eg Button) properly defined , accurate, and communicated to assistive technology?	Yes	No	Yes	Yes	Yes	Yes
Is the state of an element (expanded or collapsed) properly defined , accurate, and communicated to assistive technology?	Yes	No	No	No	No	NA
Are modal dialogues able to be used with keyboard alone and assistive technology? Focus management, hiding underlying content, etc.	Yes	No	No	NA	Unk	NA
Are carousels able to be used with keyboard alone and assistive technology? Ability to pause, navigate to individual items, etc.	NA	No	No	NA	Yes	Yes
Are menus able to be used with keyboard alone and assistive technology? Ability to expand and navigate subitems	Yes	No	Yes	Yes	Yes	Yes
Are expandable/collapsible accordion elements able to be used with keyboard alone and assistive technology? Ability to expand and navigate subitems	Yes	No	Yes	Yes	Yes	No
Are Tabbed Interfaces able to be used with keyboard alone and assistive technology? Ability to tell active tab and navigate to appropriate content	Yes	NA	Yes	Yes	Yes	Yes
Are CAPTCHA interfaces able to be used with keyboard alone and assistive technology? Ability to tell the clue and successfully enter and authenticate	NA	NA	NA	NA	NA	NA
If a user selection creates an unexpected change on the page, was the change communicated to the user?	Unk	Yes	Yes	Yes	Unk	Unk
Errors Found on Home Page						
Wave Accessibility Evaluation Tool						
Error Type	Number Found					
Errors Found	0		0			
missing alternative text		13		1	9	7
missing form label		4		8	4	
empty button		1			1	

empty link		7		28	21	534
linked image missing alternative text				2	2	4
spacer image missing alternative text				1	16	
multiple form labels				1		
empty heading				2		
Missing Link Label						3
Axe Developer Plug-in						
Error Type	Number Found					
buttons must have discernable text	2		1		1	
images must have alternate text		2		1	4	7
elements must have sufficient color contrast	18	63	25	4	251	2
form elements must have labels	3	1			2	2
links must have discernible text		4		24	1	3
zooming and scaling must not be disabled	1			1		
ARIA role must be appropriate for the element	3		1		6	
IDs used in ARIA and labels must be unique				1		34
heading levels should increase by one	1	4			4	
page must contain a level one heading			2	3		
page must not have more than one contentinfo landmark	1				1	
page must have one main landmark	1	1		3		
all page content must be contained by landmarks	1	1		1	1	
the skip-link target should exist and be focusable	2					
<html> element must have lang attribute			1	1	3	
id attribute value must be unique				5	28	46
frames must have title attribute				2	3	
<video> elements must have captions				1		
<video> elements must have an audio description track				1		
 and must only directly contain , <script> or <template> elements						4
 elements must be contained in a or 						43
Contentinfo landmark must not be contained by landmarks					1	