Website Content Accessibility of Banks Websites in Pakistan Using WCAG 2.0

Nazish Nouman
Department of Computer Science, Jinnah University for Women Karachi, Pakistan
nazish@juw.edu.pk

ABSTRACT
Over the period of time technology has become indispensable for us. It may not be untrue to say that technology and Internet rule human’s life now. Many people cannot even visualize their lives without Internet these days. Internet makes available access to social networking, news, email, ecommerce business, and entertainment etc. According to the survey, there are almost 650 million people with diverse disabilities around the world. Only if developers make little more effort, most of the content of a website can be made accessible to people with disabilities like everyone else. This study shows that currently most websites in Pakistan have an accessibility barrier that makes it difficult for people with disabilities to use the websites. Though number of softwares are available to support special people in their daily web usage, lack of developers concern often seem to limit the use of these software. This paper explores and examines the accessibility issues of different financial websites of Pakistan. The study is conducted on the basis of Web Content Accessibility Guideline version 2.0, using multiple web accessibility tools. It identifies the major problem of accessing website content to those who have hearing, listening, impairments or other physical disabilities. Intent of this study is to highlight the ignorance of government and common people towards people with disabilities. Slight concern of developers during website development can help these people in their website usage significantly. Detailed results are presented after comprehensive evaluation of many financial institutions websites against WCAG 2.0

Keywords: Website accessibility, ebanking, WCAG 2.0.

INTRODUCTION
Internet continues to grow day by day. With the fast evolution of internet the usage and users also grew. During research it is explored that number of internet users are increasing day by day and has reached from 16 million to 2,110 million over last 15 years; so as the counts of websites which are available to facilitate users.

According to the recent survey, till December 2010 around 266,848,493 websites are available on World Wide Web. There has been an increase of 47 million hostnames and 7 million active websites over the last few months. [1]

1.1 Why is website accessibility important?
Technology with the growing usage of internet made the human handicapped. Now we play online, go for shopping online, spread our business online. From advertisement to social networking, reading news paper to the financial transactions and even paying electricity bills is all reliant upon the internet and websites which provide us bulk of data on just one click.

Technology considerations apart, accessibility shares some goals with the field of usability, which concerns the ease with which visitors interact with a website. Research has shown usability considerations to be essential to the success of a website. For example, what use is website navigation if none of the links tell you where they are going? Unfortunately, this is exactly what can happen for blind Web surfers. Websites can be read aloud to a user by means of software called "screen readers". When a screen reader encounters an image, it requires alternative text to be provided so that the meaning of the image can be conveyed to the user.
Image-based navigation menus that don't provide such information are all too common, and render the navigation, and the website, unusable.

In April 2005, the Disability Rights Commission (DRC) released a report detailing the results of a year-long investigation into the accessibility of 1000 UK websites. The report revealed that nearly 81% of the websites examined failed to conform to basic accessibility guidelines set out by the Web Accessibility Initiative, part of the World Wide Web Consortium. This shows that far too many businesses and public sector organizations are failing to seriously consider the accessibility of their websites and, as such, are failing to realize the full potential of their presence on the Web. A website that can reach a larger audience is an advantage both to its owners and its visitors and in many cases involves less time and effort to create and maintain.[2]

Currently around 10 per cent of the total world's population or 650 million people in the world are disabled, according to the World Health Organization [3]. And if we talk about Pakistan then according to the statistics/data available with government in 2009, 6,789 disabled persons in Pakistan. [4]

The above statistics show that there are number of people around the world who are incapable to access websites because of certain disabilities. These include speech, visual, auditory, cognitive, impairments and other physical problems. Web accessibility implies that people with disabilities can use the web, where same access is not possible; equivalent access shall be provided. Web accessibility guidelines ensure that people with disabilities can also navigate, understand and interact with the web like others.

These special people shall be given due concern so they can also contribute to the web community easily and effectively including all those older people whose abilities are changed due to aging process.

Today most of the businesses are running online using internet technology. For example, even newspapers content are being published online, and it’s an utter disappointment for all those who have some visual impairment and can’t just read the news.

1.2 Accessibility Problems

Most of us take for granted how easy it is to use the web. We look at the visual presentation of a web page, quickly scanning the content and navigation then homing in on the part of interest using our eyes, the mouse and keyboard. The web works so well as a medium if you can see. Ignoring the vagaries of a particular design and the quirks of the various browsers the web presents information in a largely visual format that suits most of us.

Now what happens if we take away some of the things most of us take for granted. How easy is it to use web pages when our sight is taken away, can we navigate pages when our mouse or keyboard is taken away? Now the web doesn’t look like such an attractive place – barriers are in place. This is the predicament of many disabled people.

It is a tragedy to discriminate against disabled people on the web simply through lack of thought, consideration or awareness. Many websites that are designed without considering accessibility could result in alienating visitors and losing potential sales.

The internet should be a wonderful tool for communicating, learning, interacting, shopping, entertainment … for everyone.

Doors have been opened for disabled people with the internet providing new opportunities and more freedom so they have potentially more to gain than the able bodied. Disabled people represent approximately 12% of the adult population in the UK, so why exclude them? The internet has huge potential for people with disabilities.

To address this issue the Web Accessibility Initiative (WAI) is a working group set up within the World Wide Web Consortium (W3C) responsible for setting web accessibility guidelines. [5]

1.3 Basic Principles and Guidelines of WCAG 2.0

Web Content Accessibility Guidelines (WCAG) 2.0 covers a wide range of recommendations for making Web content more accessible. Following these guidelines will make content accessible to a wider range of people with disabilities, including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, photosensitivity and combinations of these. Following these guidelines will also often make your Web content more usable to users in general.[9] In the second version of WCAG, w3c
highlighted four principles and each principles based level or priority, A, AA, AAA where A has the highest priority.

2. RESEARCH METHODOLOGY

This research is conducted by taking most valued banks list from state bank of Pakistan. Compare numerous popular web sites with WCAG 2.0 principals in terms of their usability and content accessibility using multiple web accessibility tools and found a number of violations in content when analyzed manually and by using few automation tools.

2.1 Data Analysis and Results

Various financial websites are analyzed and evaluated in terms of their accessibility. Many online tools are used to check accessibility of websites, including sortsite, achecker, wave and tawdis.

<table>
<thead>
<tr>
<th>Problem Identified</th>
<th>Principle Violated</th>
<th>Guideline</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>No text alternative provided</td>
<td>Perceivable</td>
<td>1.1</td>
<td>A</td>
</tr>
<tr>
<td>Alternative forms of CAPTCHA not provided</td>
<td>Perceivable</td>
<td>1.1.1</td>
<td>A</td>
</tr>
<tr>
<td>All functionality not available via keyboard</td>
<td>Operable</td>
<td>2.1</td>
<td>A</td>
</tr>
<tr>
<td>Web pages do not have descriptive titles</td>
<td>Operable</td>
<td>2.4.2</td>
<td>A</td>
</tr>
<tr>
<td>Use of inappropriate color</td>
<td>Perceivable</td>
<td>1.4</td>
<td>A</td>
</tr>
<tr>
<td>Decorative images are not implemented in a way that can be ignored by assistive technology</td>
<td>Perceivable</td>
<td>1.1.1</td>
<td>A</td>
</tr>
<tr>
<td>Blinking and Scrolling Text movement</td>
<td>Operable</td>
<td>2.2</td>
<td>A</td>
</tr>
<tr>
<td>Content cannot be presented in different ways without losing information</td>
<td>Perceivable</td>
<td>1.3</td>
<td>A</td>
</tr>
<tr>
<td>Link text that describes the purpose of a link</td>
<td>Operable</td>
<td>2.4.4</td>
<td>A</td>
</tr>
<tr>
<td>Label elements not provided to associate text labels with form</td>
<td>Perceivable</td>
<td>1.3.1</td>
<td>A</td>
</tr>
<tr>
<td>Language attribute not used</td>
<td>Understandable</td>
<td>3.1.1</td>
<td>A</td>
</tr>
<tr>
<td>Same page title on multiple pages</td>
<td>Operable</td>
<td>2.4.2</td>
<td>A</td>
</tr>
<tr>
<td>Start and end tags not used according to specification</td>
<td>Robust</td>
<td>4.1.1</td>
<td>A</td>
</tr>
</tbody>
</table>

The website evaluation processes comprise on testing of each site manually as well as automatically using online accessibility evaluation tools. The table, above shows the common accessibility problems identified during evaluation of various e-banking sites of Pakistan. The result shows that most of the websites have failed to fulfill the Level A. This causes the impossibilities with accessibility users to use some pages.

After thorough evaluation of all banking websites, results shows that most of the websites do not complaint to perceivable and operable principles. Also, it was discovered that websites does not meet even level A criteria.

There are number of errors found in almost every banking website in which few are discussed below.

- **No Text Alternative Provided**
In every website is the absence of alt tag, non-text attribute property. The purpose of Alt attribute is to read the text associated with an image that serves the same purpose and conveys the same essential information as the image. It is read out loud by screen readers for those with visual impairment.

- **Alternative forms of CAPTCHA not provided**
Another error found during research is the violation of CAPTCHA images. It is used to avoid spam robots and other software from gaining access to a site. It is used in most of the e-banking sites associated with forms, which helps to stop spamming. The purpose of this technique is to provide information via the text alternative that identifies the non-text content as a CAPTCHA. Such tests often involve asking the user to type in text that is
presented in an obscured image or audio file. But in most of the sites no audio file is available to by screen readers and no alternative text is provided.

- **Pause, Stop or Hide Issues in Blinking and Scrolling Text**

Another violation is the use of scrolling and blinking text which cannot be paused and resumed by users. In this case, some users with low vision or cognitive disabilities will not be able to perceive the content.

- **Web pages do not have descriptive titles**

Document must have a descriptive title which shows the purpose of webpage. Titled should be present and unique which is read aloud by screen readers which helps sighted people to know the page description.

- **All functionality not available via keyboard**

Another very important failure reason is a use of only pointing-device-specific like mice, which cause problem for those who cannot use devices that require eye-hand coordination or user with no vision. Keyboard or other input device alternative must be present.

3. CONCLUSION

This paper endeavors to discover the importance of website content accessibility focusing disable people. The study further investigates that most of the e-banking sites of Pakistan are failed to follow W3C WCAG 2.0 guidelines. The paper additionally revealed that e-banking sites of Pakistan are ranked low in terms of their accessibility.

This study is based on results of multiple automation tools in which SortSite, tawdis, Wave and acheckers is at top.

This paper is also an eye opening study for all the website developers which hopefully will assist them to identify the key problems of website accessibility that should be taken into account during development.

REFERENCES


[7] Panayiotis Zaphiris and Giorgos Zacharia. ”Website Content Accessibility of 30,000 Cypriot Web Sites”, 1 Institute of Gerontology and Dept. of Industrial & Manufacturing EngineeringWayne State University, Detroit, MI48202, USA2,

[8] Chai Lee Goi, “Website Accessibility and website Development in Asia”, Department of Marketing and Management,School of Business, Malaysia.


