

Analysis of Web Accessibility Standards

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Abstract— *Web is increasingly becoming crucial source of getting information and knowledge. All this information is necessary to be made Accessible and usable to everyone including persons with disabilities. Several standards, guidelines, regulations and policies exist to make web services accessible and usable. Standards are technology specific, geographical boundaries specific and specific to address challenges of specific group of people. People and organizations are often hindered which standards and regulations best suit for their requirement. Sometimes organizations have to follow multiple standards to address their need.*

Keywords— *Web, standards, Web services, Guidelines, Accessible*

I. INTRODUCTION

Persons with disabilities use various assistive technology devices mostly on client side to access web as per their need. Specific disabilities require specific assistive technologies such as persons with blindness use screen readers, persons with low vision use screen magnifiers, persons with motor disabilities use speech recognition software, special key board, track ball mouse, persons with auditory impairment use sign language interpreters and captioning for audio visual material etc. Despite of these assistive technologies, they have Several accessibility barriers on web due to poor and improper designing of web interfaces in order to provide smooth usability to users with disabilities, the web interfaces should be compliant to various national or international accessibility standards and regulations. Several accessibility standards and regulations are available to address various accessibility issues in web interfaces.

II. LITERATURE SURVEY

The web accessibility movement is started in late nineties in world. United States of America introduced section 508 in US rehabilitation act followed by they passed Americans with disabilities act (ADA). The web accessibility movement is started in late nineties in world. United States of America introduced section 508 in US rehabilitation act followed by they passed Americans with disabilities act (ADA). World Wide Web consortium also started web accessibility initiative (WAI) in 1996 and started developing guidelines for content accessibility, authoring tools accessibility, browser accessibility etc.

Product based software companies like Microsoft, IBM, Oracle; Adobe etc also started developing accessibility standards for their own products in late nineties.

First version of Web content accessibility guidelines (WCAG1.0) was released in 2003. Since then accessibility was started to be addressed throughout the globe. Australia passed an act (disability discrimination act (DDA) in 1998. Several European states like Switzerland, Ireland introduced accessibility standards for their countries. United Kingdom had also the similar laws in late nineties. India also had persons with disabilities act in 1995 but no mentioning on accessibility of website and software application. Accessibility is being addressed in India after signing on United Nations conventions on rights of persons with disabilities (UNCRPD) in 2007. Then India has introduced a government of India guidelines for web accessibility (GIGW) in 2009 to address accessibility issues in government web portals.

2009 was the start time of addressing accessibility barriers in mobile applications including mobile web applications. Apple and android had prepared best practices for mobile web.

III. CURRENT STATUS

Several organizations has accessibility standards and regulations with their specific objectives based on geography, context, technology etc. World wide web consortium (W3c) has web accessibility initiative (WAI) that develops accessibility standards for various purposes such as Web content accessibility guidelines (WCAG) for content accessibility, Authoring tools accessibility guidelines (ATAG) for Web authoring tools and integrated development environments, User agent accessibility guidelines (UAAG) for accessibility of user agents, Accessible rich internet applications (ARIA) for accessibility of rich internet applications etc. Various states have their accessibility regulations such as India has Government of India Guidelines for Web accessibility (GIGW), USA has section 508 of US rehabilitation act, Americans with disabilities act (ADA), UK and Australia has disability discrimination act (DDA) to name a few. UK and Australia has the same act name in different context. A corporate organization like Microsoft has Microsoft active accessibility standards (MSAA) and micro soft user interface automation (MSUI automation). Gnome has Gnome accessibility standards, Apple has apple accessibility

standards and android has Android accessibility developers' checklist.

Beside these adobe has its accessibility standards such as flash accessibility design guidelines, flex accessibility best practices, PDF accessibility guidelines etc. IBM Oracle, Google has their accessibility standards for their products.

Recent Comparative information of these accessibility standards and regulations is not available so that it will facilitate to the organizations adapting these standards. [Comparative assessment of Web accessibility and technical standards conformance in four EU states by Carmen Marincu and Barry McMullin]

IV. PROBLEM STATUS

Comparative information of various accessibility standards and guidelines is not readily available to the organizations wish to adapt accessibility in their system which creates difficulty to the organizations in decision making. The research will provide complete analysis of selected web accessibility standards and regulations that will be helpful not only adapting organizations but also designing accessibility evaluation tools and addressing multiple compliance.

V. RATIONAL

Organizations wish to adapt accessibility standards and regulations usually seek comparative information of various available web accessibility compliance so that they can address the most suitable, economical and effective to them. Such organizations are hindered in adapting specific accessibility standards and regulations as they have little knowledge about accessibility standards and regulations. Developers of web accessibility evaluation tools also need this type of comparative information of accessibility standards and regulations as they have to show the evaluation result of multiple standards through their automated accessibility evaluation tools.

VI. SIGNIFICANCE

The research will provide:

- A. merits and de-merits of each web accessibility standards and regulations.
- B. Helpful in benchmarking specific accessibility standards.
- C. Helpful to organizations wish to address specific or multiple compliance.
- D. Helpful to web accessibility evaluation tool developers for showcasing comparative analysis of accessibility standards and regulations.

VII. OBJECTIVES

1. To gather and analyze available web accessibility standards and regulations in world to understand their specific context.
2. To provide systematic comparative information of each web accessibility standards and regulations in terms of similarities and differences.

3. To find out usability of selected accessibility standards and regulations for users with disabilities.

VIII. HYPOTHESIS

Comparative study of various web accessibility standards and regulations are helpful in addressing multiple compliance

RESEARCH METHODOLOGY

Experimental method will be followed for comparative analysis.

1. Manual analysis: Publicly available web accessibility standards and regulations on web will be downloaded and manual comparison will be done by aligning and mapping accessibility checkpoints, sections, levels etc in each web accessibility standards taken under study.

2. Checking effectiveness: Selected web accessibility standards will be implemented one after other in the experimental portal and usability will be checked each time from 5 selected web accessibility experts. Their structured feed back in the form of short questionnaire will be noted and usability before implementation, usability of the experimental portal after implementation of each accessibility standards will be taken.

IX. DATA COLLECTION

1. Primary data: The primary data will not be collected in the first step of the research. However Primary data will be collected from the selected.

2. Secondary data: Secondary data from various sources from web will be collected and analyzed.

X. CONCLUSION

This Doctoral research work will reveal Systematic comparative information of various accessibility standards and regulations in terms of technical specifications, Checkpoints, various levels of compliance, Geographic and technical Context, significance of each compliance one over other, and comparative usage in various sectors that will help organizations in decision making and addressing multiple compliance.

REFERENCES

- <http://webaim.org/intro/> [1]
<http://www.w3c.org/wai/designingforinclusion> [2]
http://www.ada.gov/enforce_current.htm [3]
<http://www.section508.gov/content/about-us> [4]
<http://www.w3.org/WAI/Resources/Overview> [5]
<http://www.oracle.com/us/corporate/accessibility/policies/index.html> [6]
<http://www.adobe.com/accessibility> [7]
<http://www.w3.org/WAI/Resources/Overview> [8]
<http://web.guidelines.gov.in/> [9]
<http://www.apple.com/in/accessibility/> [10]
<http://www.developers.android.com/ace> [11]
<http://www.w3.org/WAI/Resources/Overview> [12]
<http://webaim.org/articles/laws/world/> [13]
<http://www.microsoft.com/enable/> [14]