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UX and Significance of Web Aesthetics for People with Disability Web Aesthetics for Disabled People

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Abstract – Those people who are disabled can are mostly ignored avoided when it comes to the use of UX or other mobile app interface design. If a particular product can be developed keeping the thoughts of disabled consumers before innovation then the outcome would be even better. As a result, the product which is developed would be even more accessible to the public in general.

It is important for a web designer to realize the shortcoming in web accessibility when it is about disabled people. One should understand the importance of better standards and the need for everyone beyond moral motives.

We investigate those areas where web interfaces become a little difficult to satisfy the needs of those with mild, moderate or serious disabilities. We suggest different organizations to come up with testing and further advice.

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I. INTRODUCTION

The Royal National Institute of Blind People (RNIB) head of solutions, strategy, and accessibility Steve Tyler said that good accessibility includes good design. He says “If a site is navigable and uses site elements properly along with offering a genuine customer centered experience the creation of apps that interrogate the site, search engines that search it, and the plethora of devices that are out there accessing it can all work perfectly”.

Tom Pokinko, research director of Open Inclusions said that participatory designs with disabled people and elderly help to create better products and services for everyone (Brady and Phillips, 2003). This, in turn, results in building an overall better brand. They often come up with creative solutions for specific design problems because they are used to innovating within and around design limitations. The challenges faced by them are better than the obvious version of the same or similar kind of challenges faced by non-disabled users.

For example, it is difficult to read websites and emails having small or low contrast fonts by people with visual impairments or those who are aged.

Similarly, unclear messaging along with visual design and confusing layouts or improper visuals makes it difficult to read web pages or to understand it by dyslexics and others who have cognitive impairments. Apart from that it also has an impact on those who are stressed and might be in a hurry looking for more information.

II. THE PRESENT SITUATION

According to Tom, disabled and elderly people represent largely and quickly developing consumer segment. This increased purchasing power of consumers defines a compelling business case.

The Click-Away Pound Survey of 2016 made by Rick Williams and Steve Brownlow from the consultancy Freeney Williams investigated the online shopping experience of customers with disabilities and the costs of businesses of ignoring them. The number of disabled participants differs based on the competence level and other personal conditions, but it includes those with visual and hearing impairment. Manual dexterity and neurodiversity.

According to a recent survey, it has been found that over 6 billion disabled internet users have access needs in the UK and about 71 percent of disabled customers with access needs would avoid websites they find difficult to read (Brajnik, 2008). Another 7 percent would call up for help and 11 percent would ask help from someone else.

The estimated spending power of £11.75 billion is the most important for brands. About more than 80 percent of customers with access needs would be spending more if websites were further accessible.

But, the function of the disabled at the forefront of design can be of help to everyone.

Most importantly, the survey points how the silent customer cannot be assumed to a satisfied customer.

With the dominance of digital signature, the accessibility for disabled people becomes an issue that permeates different levels of an organization, their functions, and products.

III. HOW DISABLED PEOPLE ACCESS WEBSITES

To study what accessibility issues had disabled people have, it is important to realize how it is difficult for some people with serious conditions to access a website.

According to the Click Away Pound Survey, more than half of the respondents had used some kind of assistive technology to improve computer interaction.

The report explains four different assistive technologies: about 58 percent of respondents have screen readers, 14 percent has screen magnifiers and 13 percent has dictation software. The remaining 5 percent would be refreshable braille (Brajnik, et. al., 2011).

Some other examples of AT would include voice over features as on iOS or android devices such as Google screen reader talk back and Microsoft's narrator screen reader.

There are some users who would need a number of these. Their ability to use them depends on the device and the Operating System, the use of programs and necessary hardware.

Though AT is useful for visual impairments, website design plays an important role in access and the functioning of these assistive technologies.

IV. ONLINE ACCESS BARRIERS

According to the survey results, more than 73 percent of the people with access needs faced a problem when they visited the website for the first time (Cyr, et. al., 2006).

The use of crowded pages with a lot of content was a very common barrier where 67 percent of participants told that it was the worst issue they had faced ever.

This included poor link information, navigation, form filling, distracting moving images and graphics along with poor legibility.

Out of those who used screen readers, about 86 percent found it difficult to visit websites with their software.

“Most often inaccessible sites are not only designed properly but use scrolling imagery, advertising, and clutter. This disrupts the working of screen reading technology.

A huge amount of processing power and site rendering needs to be carried on different devices where the system is quite overcomplicated.

The survey shows that people who face difficulty in using a site are unlikely to give it a second chance even if there is an alternative. Apart from that, it is often pointed out that accessibility issues might have negative impacts on any person.

V. CREATING AN ACCESSIBLE WEBSITE WITHOUT AFFECTING THE UX

It is true that designing an assessable website comes up with a lot of advantages, for example, it has the potential to enhance in the number of audiences. It is possible to make an accessible website without impacting on the design of the website. But there are many organizations who fail to understand that the accessible websites are fully functional and accessible without any requirement of compromising on website design. As a result, these organizations are not only risking customer experiences (CX) but also their revenue.

There is a very common myth that there can be no website which is highly accessible as well as they are attractive. Actually, there are a huge number of advocates of web accessibility who used to have content and/or technology driven websites but they are not ready to establish that creativity can be comprised as part of accessible user experience (Monk and Lelos, 2007). However, it is mostly seen the web accessibility itself never affect the physical design of the website rather every website needs to be beautiful as well as easy-to-use. This misconception that design and accessibility cannot go together lies in the mind of the people from the early days of the Internet at the time when technology limited the choice of the web developers as per as the accessibility and design are concerned. But now those days have changed and the reality of today is that the web designer has now got huge freedom in creating an innovative design as well as in engaging customer experiences at the same time.

According to the Web Content Accessibility Guidelines (WCAG), it was said that the designers

of the website have the full freedom to use images and videos on the websites until they make sure that the content can be completely accessible either by offering captions for videos or providing some another text descriptions. Nowadays, a huge number of layout and design options are developed which never affect the presentation or accessibility of the website.

IV. CREATING AN ACCESSIBLE WEBSITE FOR THE FUTURE

In this digital era, it has now become possible to create a media-rich, communicating, eye-catching, appealing and accessible site for anyone. In the previous time it was seen that most of the web designers used to overlook the web accessibility but today it is seen that web accessibility is considered to be the basic objective for any organization. That is the reason why the main responsibility of UX professionals is to provide a complete, design-orientated method that can be used by everyone to a huge extent without any requirement for any rework or specialized design. Web accessibility does not necessarily mean to provide accessibility to disabled users (Ngo, et. al., 2003). But it also means that the persons who are actually in charge of web designing should design the website in such a way that can offer an excellent user experience to the ultimate user by ensuring universal access while at the same time maintaining a high level of creativity, design as well as the functionality of the website.

VII. REASONS TO TAKE CARE OF WEB ACCESSIBILITY

In the USA, all matters and requirements related to accessibility are mentioned in the Americans with Disabilities Act, 1990. At that time, that when the act was formulated, ecommerce was not a subject. Accessibility was mostly related to the physical accessibility of stores. Now, the courts have been debating on whether or not the virtual “shops” should be included. More than 800 lawsuits were registered in federal court in the USA alone. So, the problem is obvious.

Facebook is often praised for its Empathy Lab and different accessibility policies, the companies have faced legal battles. Different associations looking after the welfare of blind and deaf people have sued Netflix several times. Most of the verdicts have gone in favor of the appealing parties. Netflix had to develop systems to provide equal accessibility to all including adding subtitles in all movies and sitcoms.

Figure 1: As per the courts’ verdict, Netflix agreed to show closed captions to all its contents

A. Improved Reputation

Companies who think about people with physical impairments only benefit from the decisions of the courts and sometimes the decisions taken proactively by the courts. Developing fully accessible websites and apps have a positive impact on the reputation of the respective companies.

As far as the comprehensive accessibility is concerned, the Silicon Valley titans don’t think twice in investing for new technologies that would help everyone to access their websites, apps, and different online services. For instance, recently, Facebook has launched a technology based on Artificial Intelligence (AI) that provides the blind account holders of Facebook to use the platform object recognition technology (Petersen, et. al., 2008). This special technology helps blind users to access 2 billion images that are shared on Facebook every day. This amazing idea is the brainchild of Mat King a software engineer associated with Facebook and himself a blind. From the very beginning, Facebook has openly shown their commitment to people with various disabilities.

Figure 2: Matt King: A blind software engineer working at the Empathy Lab of Facebook

B. New Customer Acquisition

It is found that more than 80% of people with some sorts of impairments do not trust because of weak web accessibility and different technological barriers. As they are openly ignored, the users with different physical impairments prefer to invest in those companies that provide them with sufficient facilities. The purchasing power of all people with disabilities together is really enormous.

With the improved accessibility, the customer base of a company goes on increasing. By providing sufficient facilities to the people with disabilities you actually gain more goodwill and a new lot of brand loyal customers.

VIII. TYPES OF DISABILITIES AND HOW TO IMPROVE ACCESSIBILITY FOR DIFFERENT IMPAIRMENTS

Disabilities are either temporary or permanent. These users have different physical challenges; hence, they require different solutions. If you have the target of providing the same content to everyone, you have to think on behalf of disable customers too.

A. Sensory Disabilities

Two most common types of disabilities are problems of visibility or blindness (total or partial) and problems in hearing or deafness (total or partial) (Redstrom, 2008). There are other types of impairments too like colour blindness and autism.

To help people with hearing impairments to access your website or app, you can implement text transcripts and captioned videos. This system is mandatory for deaf people. In fact, this can be useful for many other users. A study made in this field shows that more than 80% of users regularly use closed captions that are neither deaf nor hard of hearing. It is a clear depiction of how new technology can be popular among common users as well.

The same thing happens in the case of new technologies adopted for the blinds. The features in this section are equally popular among the common users as well. Colour contrast, bigger font size, and options to adjust sizes are too good for the senior citizens as well.

For completely blind users, screen readers like Window-Eyes, JAWS, and Voice Over for Mac are really useful. These tools dead screen content loudly.

Navigation is made easier and faster with the help of “Skip to Main Content” to prevent reading of the whole navigation menu several times.

Properly format your web page with the help of different headings (only one <h1>, then do not skip levels), include image-wise text descriptions, keep away from intricate tables, and cautiously pick your text hyperlinks. They should properly explain where the link will go: by means of just “click here” is useless for a screen reader user as it doesn’t give any related information.

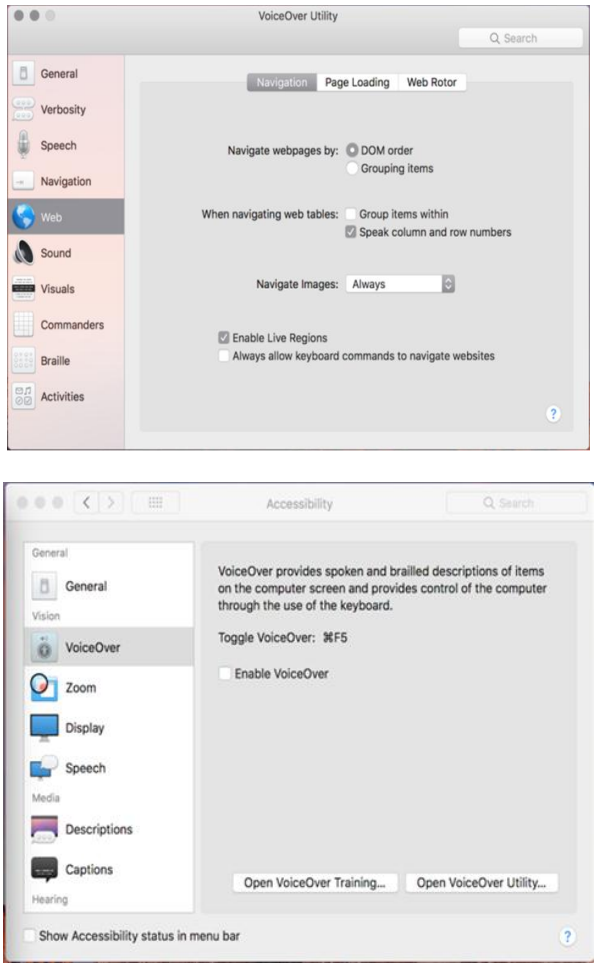

Figure 3:

B. Motor Disability

There are some people with motor disability who cannot use track pad or mouse. These users solely depend on the keyboard to browse a website. To ensure that a site is comprehensively experienced just with the help of a keyboard is perhaps the cheapest and easiest way of implementing web accessibility. Some simple work and changes are necessary and can be accessed by unplugging the mouse. In that situation, the browser will automatically select a clickable item present on the page and “tab” can be used just like the mouse.

C. Cognitive Disabilities

Cognitive disabilities include Dyslexia, ADHD, Down syndrome, Learning disability, and other cognitive impairments. Cognitive impairment grows when people get older. Consistent UI and clear content are very much important for these people.

So, you have to build a logical interface such as similar color everywhere for similar action or use of animations to take an action, etc.

Setting systems and patterns and following distinct design values will assist users to get around more rapidly and keep away from unknown things at the time of navigation. It becomes a smoother and more understandable matter for people with cognitive impairments. Easing and regulating the UI of a web site or mobile application make the users easier and guide a user to become a better user.

IX. TIPS FOR WEB ACCESSIBILITY TESTING

A. Follow Guidelines

International guidelines are available for developing accessible websites and mobile apps. The Web Content Accessibility Guidelines (WCAG) is to be followed for that. It is developed through the W3C procedure; Currently, WCAG 2.0 is available that provides a single shared standard for accessibility of websites or web contents (Schaik and Ling, 2008).

This guideline is intended for developers and experts related to this field. All documents available through WCAG shows elaborately how to develop a website to make it easily accessible to all. WCAG is based on four principles: Operable, Perceivable, Robust, and Understandable. This set of suggestions allows you to attain a level of conformance. The levels are as follows: A minimal, AA-satisfying, and AAA-excellent.

B. Check online or with an assistive technology

Online tools are available to check whether a website or application meets all accessibility parameters. Like, you can reach the official validation from W3c to check the accessibility of your website. However, you should know that online tools cannot check all parameters with equal efficiency. You also need to apply assistive technology like a screen reader to see that the website is made accessible. However, these steps are just the initiation. You have to take regular feedback from the users with various impairments to understand the accessibility standard of your website.

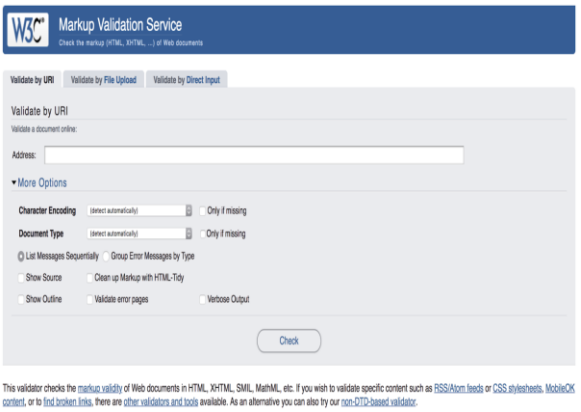

Figure 3:

C. Testing with the help of users

Including people with different disabilities in the UX texting process can be immensely beneficial. Needless to say, that they are the right persons to give the most relevant feedback by sharing their respective experience. Working with an expert and trusted UX designer is also necessary as they can develop a right testing environment on the basis of different parameters.

X. GAINING ACCESSIBILITY COMPLIANCE IS NO LONGER AN OPTION

With the rapid proliferation of online concept of business, accessibility of websites has become a major issue for both the companies and users. By 2050, the aging population of the world will be doubled. That means the need for accessibility will increase rapidly with time as impairments go hand-in-hand with aging.

But the task is a gigantic one. Companies or website owners who are still ignoring this important matter should know that they are losing customers almost every day and if they still ignore they will lose a huge number of customers within the next 10-12 years. Accessibility right is now a basic right. People with impairments should have equal opportunities like any other person (Brewer, 2004). If any company or website or web application ignores this fundamental matter, they will lose trustworthiness of the market as a whole.

Sooner a company focuses on accessibility sooner they will be recognized as a company with values and high ideologies. They will get more traffic which means more revenue and profit. This is going to be a win-win situation to all.

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