Internet Marketing: A Special Website for Visually Impaired Customers

by

Wan Mardhiahani Binti Wan Marzuki

Dissertation submitted in partial fulfilment of
the requirements for the
Bachelor of Technology (Hons)
(Business Information System)

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CERTIFICATION OF APPROVAL

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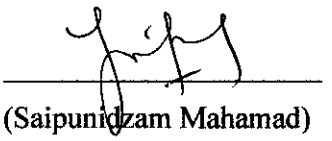
Approved by,



(Saipunidzam Mahamad)

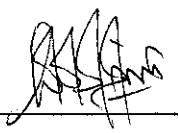
UNIVERSITI TEKNOLOGI PETRONAS

TRONOH, PERAK

May 2011

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.



WAN MARDHIAHANI BINTI WAN MARZUKI

ABSTRACT

This project covers three aspects which are internet marketing and website accessibility and visually impaired people. The main focuses are on the implementation of the web accessibility in the design of the website that can be accessible to all customers either normal or visually impaired. The problems that had been found are the failure of in designing the website where as neglecting the visually impaired customers and also the challenge in convert visitor into buyer during the initial visit to website. In this project, it will focus on the qualitative research to do the data collection for the purposes of the project. The data collection will be on the primary and secondary whereby the primary data gathered from the interviews that conducted and listening to web seminar meanwhile the secondary data gathered from the online journals, articles and books. The data that had been collected will be analyzed and interpreted in order to get the result. From the result, it can develop the design of the website and have user acceptance testing whether it is accessible for visually impaired to access the website.

ACKNOWLEDGEMENT

I would like to take the opportunity to express my utmost gratitude to the individuals that have taken the time and effort to assist me in completing the project. Without the cooperation of these individuals, no doubt I would have to face some minor complications throughout the course and also during developing the project.

First and foremost the utmost gratitude goes to my supervisor, Mr. Saipunidzam Mahamad. Without his guidance and assistances, I would not be able to develop the project. Also thanks to the Final Year II Project Coordinator, Ms Siti Rohkmah M Shukri for providing me with the initial information required along the project development. Then to my colleague, Miss Shahiera Mohd Puad, who is helping me in this project. I also would like to express my gratitude towards to two persons who willing to be interviewed which are Mr. Moses from National Council of Blind Malaysia (NCBM) and Mr. Jeff Wong from Blind People Association Perak branch. Due to their help in giving information regarding to visually impaired people that I have gained insight the process or the steps that I need to be taken in order my project is done and success.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1

INTRODUCTION

1.1 Background

Internet can be used in many ways for the internet marketing such as carry out research for the target market (demographics, preferences, and needs), sells goods or services, give out information regarding to business's messages about business itself, the products or the services [1]. Other than that, those people that generate income from Internet and those brick and mortar business owner who choose to market their products on the Web used Internet marketing as it is the process of marketing goods and services via on Internet [1].

With IT advancement, individual with visual disabilities can access the website as normal individual whereby she or he is supported by devices such as screen reader. Thus, with IT enhancement, it can help any industry such as small business or home-based business to gain more customers. Nowadays, home-based business owners can market their product via internet as the marketing tool. They only need to develop a website that can be accessible to all either able or disable people.

Visually impaired can be defined as a person who is having reduced vision so severe as to constitute a handicapped or can known as a defect in vision [2]. According to World Health Organization (WHO), there are top causes for the people having visually impaired which are uncorrected refractive errors, cataract and glaucoma. Thus, the World Health Organization estimates that

cataract, glaucoma, and age-related macular degeneration are the top three causes of blindness in year 2010 [3].

People have a wide range of visual abilities and disabilities - from blurred vision, to partial sight, to complete blindness - which often change over time. In this project, it will focus more on the visually impaired people such as blind people, and low vision people as the potential customers for the home-based business. In order to get broader potential customers, having a website that colour effectively for people with vision impairment is important. Therefore, it is important to know the right and the appropriate colour, text, images, etc that will be used in the website as a part of the ease-of-use for the vision impaired people. From this, it can increase the traffic for the web in which can ignite the desire to perform the action to buy product via online.

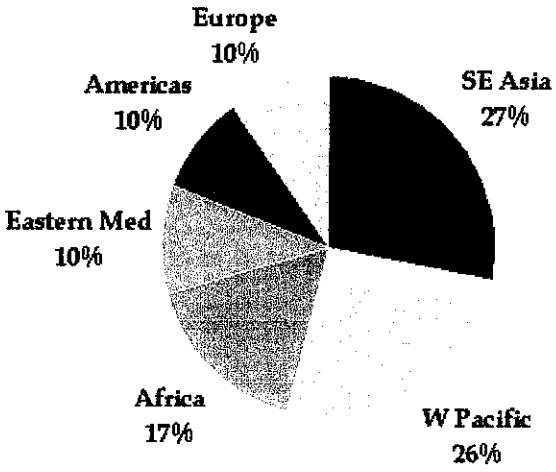


Figure 1: Statistic for visually impaired around the world

Source from allcountries.org

According to Yates (2005), the term of usability can be refers to how easy the web site is for everyone to use, and incorporates design layout patterns that may be "learned" by users who then may explore the site and derive value from its contents [4]. Then Yates quoted from Foley (2003), regarding to the term of accessibility which he referred to the extent by which the web site, including the technology such as hypertext coding, is barrier-free to all users of the information, thus providing enhancements that enable people with disabilities to move towards independence. Yates also quoted from Neal (2003) whereby he suggested that web accessibility is the ability for a person using any agent (software or hardware that retrieves and renders web content) to understand and fully interact with a web site's content. Thus, these the two definitions identify common ground in terms of both human and machine interactivity [4].

1.2 Problem Statement

According to Lunn, Harper, and Bechhofer, the World Wide Web is a predominantly visual media for presenting and disseminating information [5]. As such, visually impaired users, who access content through audio interaction, are hindered as the Web is not designed with their needs in mind [5].

Based on the research of Loiacono & MCcoy, people with disabilities are growing whereby they quoted from Cohn, that over five million US children and teenagers live with disabilities either physical or mental [6]. They also quoted from Simmons, that impaired vision and hearing loss are the chronic health conditions that will be face by the aging "baby boomer" generation [6].

According to Peters & Bradbard, blindness, colour blindness and low vision (i.e. peripheral constriction or retinal detachment) are the visual disabilities. They also mentioned that it difficult to read the information on the website that applied dark backgrounds, unusual or small fonts and unclear images pose problems for people have low vision or blind [7].

It could increases the potential customer base as designing and creating a website that are usable to those with vision impairment as well as those with normal sight [8]. When design or create a website that not really meets the needs of visually impaired people, it would be difficult for them to navigate through the website [9].

Nowadays, people with visual impairment could browse or surfing the Internet by having a screen reader [10]. This tool helps them by narrate the text that appears on a web page, and give the auditory map of the structure as well as the controls that displayed on the web page [10]. Nevertheless, a web page that

poorly design create a challenge to visual impaired people such as blind people that cannot see the web page even uses a screen reader [10].

According to Ranaweera, Bansal, & McDougal, the initial transaction of rationale is twofold. First, the consumers' response to the website can influenced the initial transaction whereby the actual delivery and consumption of the service relating to the initial transaction will influenced the subsequent transactions. Without proper delivery or fulfilment, customers are unlikely to return to a website irrespective of their perceptions of the website. Second they quoted from Reichheld & Schefter, is the acquisition costs are likely higher than retention costs. Therefore, to convert the first time visitors into actual buyers is a major challenge [11].

1.3 Objectives

The objectives for this project are:

1.3.1 To design an accessible website for visually impaired customers

1.3.2 To identify how the use of web accessibility can help visually impaired customers in internet marketing

1.4 Scope of study

In order to meet the objectives of the internet marketing: a special website for vision impaired customer's project and also fit the time frame for this project, need to planning from the start until the end. First thing need to do is do research regarding to the visually impaired people by knowing they can be the potential customers to the business. Surveys, journals and books are the sources to find the information related to visually impaired people that can contribute in designing the website for them. The last step to do is designing the website by following the web accessibility in order visually impaired can access the web page.

1.5 The Relevancy of the Project

The relevancy of this project is can educate people in knowing the steps in knowing the importance of website design especially to visually impaired people. Other than that, this project can contribute knowledge to society by understanding the requirements that are needed in order to have an accessible website. Thus, this project can create awareness among Malaysia netpreneurs when it comes to designing website for their business.

CHAPTER 2

LITERATURE REVIEW

The growth of people using internet is increasing every day that makes internet marketing is a growing business [12] (see Figure I). Internet marketing becomes well-known when it is conducted on a "self service basis" in which the customers have the information to explore choices in production variations [12]. Other than that, many business owners use the internet to expand their business across nation because internet marketing can enable the ecosystem pattern to widen the business to wider geographic areas [13].

Due to Internet audience growth, vast of businesses quickly adapted the Internet as the channel between their marketing communications functions economically and efficiently in which the main purpose of website is to raise the business's attentiveness and offerings for those visit the sites [14].

World Regions	Populations (2010 Est.)	Internet User Dec. 31, 2010	Internet Users Latest Data	Penetration (% Population)	Growth 2000-2010	Users % of Table
Africa	1,013,779,050	4,514,400	**110,931,700**	10.9 %	2,357.3 %	5.6 %
Asia	3,834,792,852	114,304,000	**825,094,396**	21.5 %	621.8 %	42.0 %
Europe	813,319,511	105,096,093	**475,069,448**	58.4 %	352.0 %	24.2 %
Middle East	212,336,924	3,284,800	**63,240,946**	29.8 %	1,825.3 %	3.2 %
North America	344,124,450	108,096,800	**266,224,500**	77.4 %	146.3 %	13.5 %
Latin America / Caribbean	592,556,972	18,068,919	**204,689,836**	34.5 %	1,032.8 %	10.4 %
Oceania / Australia	34,700,201	7,620,480	**21,263,990**	61.3 %	179.0 %	1.1 %
World Total	6,845,609,960	360,985,492	**1,966,514,816**	28.7 %	444.8 %	100.0 %

Table I: Source: Internet World Stats

According to Peters & Bradbard, in order to accommodate a wider set of ways users can access the site is by designing an accessible website. Thus, the results of the website are not only serves on the people with disabilities but also beneficial to everyone [7].

Based on Walsh (2006) as time and technology progressed, the environment became increasingly graphic in which many of the navigational points are now depicted with icons, images, and illustrations. Information streams across the screen or data pops up in different media formats, all unreadable by the screen reader software [15]. By learning from blind users exactly what their needs are to successfully navigate a web site, designers will make the content on their pages accessible to all users [15].

Walsh also mentions in his paper that the screen reader software searches a web page for American Standard Code for Information Interchange (ASCII) text wherein it is a character encoding those computers and other digital devices use to communicate with each other. It is the only text the software can work with. Walsh quoted from Chong (2002) that web site designers should use ASCII on all features of the page; "links, document content, push buttons, drop down menus and graphical images". Use of bit-mapped text should be avoided.

Meanwhile, based on the W3C standard, a text based equivalent should be provided for all non-text elements. Most visually impaired users navigate a page by jumping link to link using the tab button. Again Walsh quoted from Chong (2002) that the tab method is only adequate when designers label each link with clear and concise information defining exactly what the link will access [15].

Based on Minjeong, Jung-Hwan & Lennon (2011) research, they cited from Syzmanski and Hise (2000) that the characteristics of web site that influence e-satisfaction of consumers are the convenience, site design, and financial security [16]. Consumers really emphasize on the ease of navigation and also privacy when they want to purchase online. They also cited from Yang and Wu (2003) that advanced image interactivity in a web site features can enhanced the consumer satisfaction as it can increase the browsing and purchasing [16]. Consumers nowadays want to see something new and fresh, that run from the typical static website that can make the purchasing power go low.

According to Flavian, Gurrea, and Oru (2009), as the growth of internet and e-commerce are increase, the determinant for the key factors of website design are coming from several of perspectives in order the consumer can handle with ease by having usability elements in a website [17].

Based on Childers and Kaufman-Scarborough (2009), they quoted from Russell (2003) mentioned that some web sites may not be compatible with the assistive technology, are tending to fail. The National Organization on Disability reports that there is specific disability type of Internet users; for instance, from the Harris poll 2001 shows that visually and hearings impaired were most likely to use the internet at home (43%), people with learning or cognitive disabilities (39%) and mobility and movement impaired people (35%) which they taken from People with Disabilities Still Lag on Internet Usage (2000) [18].

Childers and Kaufman-Scarborough (2009) stated that people disabilities are like other consumers browse and find the information regarding to the product that they want to purchase. Therefore, they mentioned in their paper; when a person with visual impairments such as blind, colour-blind, and low vision shops on an accessible website, the website enables to them rather than disables; thus shows that they shop just like other consumers who do not have disabilities. The people

disabilities are like other consumers browse and find the information regarding to the product that they want to purchase; so that they can evaluate much more conveniently than in the bricks and mortar environment [18]. A person who is blind can effectively shop online similar to sighted consumers unless the web site has graphics or images that do not have necessary accessibility features, such as informative alt tags [18].

Characteristic	Disabled (n = 131)	Non-disabled (n = 545)
Purchased online	53%*	68%
Frequency of online shopping		
More than once a month	23%*	19%
Once a month or less	38	56
Hardly ever/never	39	26
Amount spent online		
Less than $100	48%	41%
$100 to $300	19	30
$300 to $500	15	14
More than $500	18	15
Mean number of products purchased	1.9*	2.5
Reasons for shopping online		
Availability of information from vendors	7%	6%
Saving time	5**	12
To obtain better or cheaper prices	39*	27
To get better product selections	14	16
Convenience	53	61
Gender — male	34%	41%
Age		
18 to 44	39%*	60%
45 to 64	53	36
65 and greater	8	5
Education		
High school or less	30%*	23%
Some college	43	31
College degree or higher	27	46
Employment		
Full-time	37%*	68%
Part-time	14	12
Unemployed/retired	8	17
Income		
Less than $25,000	26%*	10%
$25,000 to $70,000	35	43
$70,000 and higher	39	48

Table II: Online

Topic	Visually impaired (n=77)	Reading (n=68)	Hearing (n=53)	Physical (n=138)	Manual (n=63)	Speech (n=48)	Non-disabled (n=756)
General Internet							
Access to Internet	58%**	38%*	51%*	48%	41%*	42%*	69%
Broadband	28	20	30	25**	31	23	39
Activities							
Sent an email	62	31*	30*	42*	39*	25*	62
Visited newspaper web site	42	27	19*	33	39	20*	42
Online shopping							
Purchase online	69	45*	44*	49*	50**	35*	69
Mean # products purchased	2.5	1.2*	1.4*	2.1	2.2	1.5	2.5
Reasons for online shopping							
Availability of information from vendors	0	0	9	10	9	0	7
Saving time	0	0	9	0*	0	17	12
Better or cheaper prices	41	44	64*	43**	46	33	28
Better product selections	14	11	9	20	9	17	16
Convenience	48	56	36	47	55	50	60

Table III: Online characteristic with types of disabilities

Based on Figure IV, taken from *Expanding opportunities for online shopper with disabilities* journal, it shows that visually impaired are the most in using Internet and also purchasing online. The reasons for them go online shopping are the product they purchased online cheaper or better than real shop and more convenience rather than shopping in real shop.

According to Childers and Kaufman-Scarborough (2009), the issues for the limitations of web site usefulness can be found when the web design lacks of "alt tags"; a text based description when have graphics and images whereby the screen reader cannot describe them. Therefore, by providing information online in picture format is actually one way in which to compensate for the lack direct product experience. Hence, research needs to identify to translate the sensory compensation information into alternative ways like text or audio, so that the visually impaired can "view" the picture without having any difficulties [18].

According to Baguma and Lubega (2008), there is a close relationship between navigation, content and user interface. Some of the issues that influence content accessibility also influence navigation, whereby if the web designer don't provide text equivalents for images that are links, then people that using screen readers or text browsers will not be able to navigate the site [19].

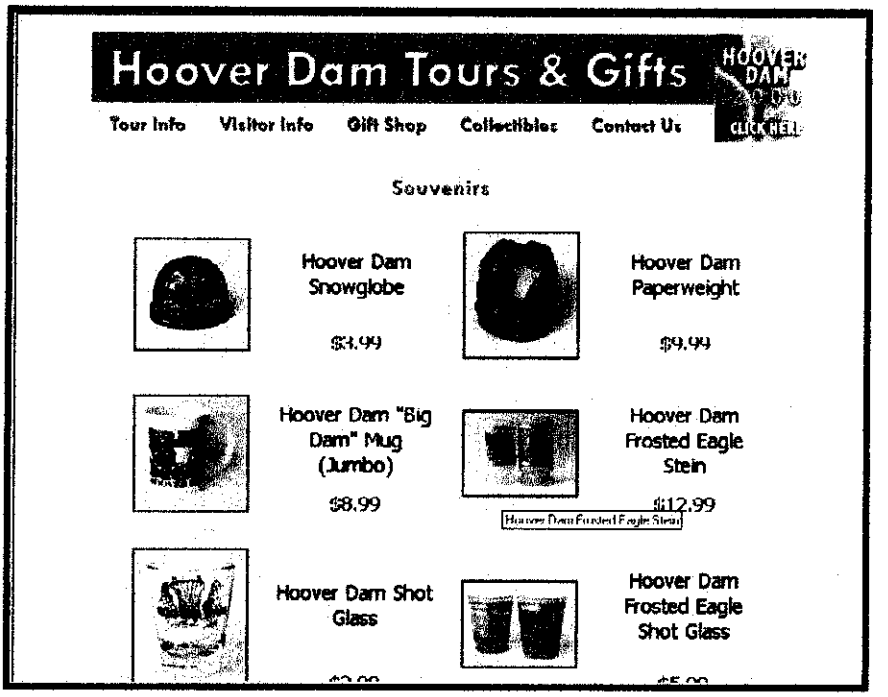


Figure II: A Snapshot of Hoover Dam Website

Based on Figure V, the visitors which in this case are the screen reader users were given no idea what items looked like. The information that relay to them are only item's name and price but not the information regarding to the picture. Therefore, the users felt the already information was not enough for them to make decision in purchasing the product or not [20].

Based on Hackett and Parmanto (2009), the term accessibility, as applied to the Internet, means that anyone can equally access the information presented, regardless of device and/or personal limitations. Nevertheless, persons with disabilities, seldom find themselves that the web is far from accessible. Some persons with disabilities use assistive technologies to aid them in accessing Internet information [21]. Hackett and Parmanto quoted from Godwin-Jones (2001), a person with low vision can use a screen magnifier to enlarge the text on the computer, use a larger font, or increase the contrast between background and

foreground colors. Meanwhile, a person who is blind can use a text-to-speech program that reads aloud the text on the screen via a voice synthesizer or use a refreshable Braille display to obtain a tactile output of the information. Therefore, web designers must take into consideration both the limitations experienced by individuals with disabilities and the limitations that coincide with their use of computer-related assistive technologies [21].

Therefore, it is crucial for every web developer to bear in mind about the necessities of the visually impaired needs in a website. Must apply the web accessibility rules as the website will be readability and have the accessibility for the visually impaired. The usage of ALT tag to describe the images as the visually impaired cannot see the real images and avoid putting flash and video because the screen reader software cannot read them. Screen reader only can read text-based only as it will transfer the text into sound so the visually impaired can hear and use it to assist them in navigating the website.

CHAPTER 3

METHODOLOGY

This project methodology is involving the prototyping methodology. Primary data were collected from interviews that conducted. Secondary data gathered from the journal, books and article. These data contribute in developing the accessible website for visually impaired customers. This stage covers the feasibility and also the time frame for this project. A Gantt chart on this project is created (see Appendix I).

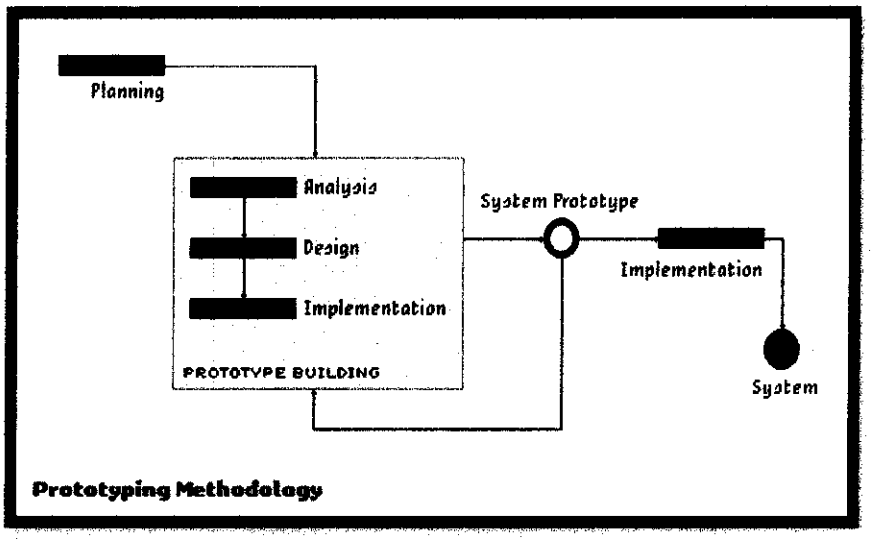


Figure III: Prototyping Methodology Model

3.1 Project Activities

3.1.1 Phase 1: Research process and planning

This project is initiated by planning starting with detailed background study on the internet marketing, visually impaired customers and also the web accessibility. In order to achieve all the data that are needed, qualitative research on the subjects are needed to be done. For the visually impaired customers such as blind people, the data need to gather via interviews regarding to the ease of website. By conducting interview with committee of National Council for the Blind Malaysia (NCBM) and Blind People Association regarding to web accessibility, information about visually impaired and web accessibility can be gather. For better understanding in the internet marketing subject, listen to web online seminar is good in which can gain knowledge and information regarding to the usage of internet as a marketing tool.

3.1.2 Phase 2: Data collection and analysis

In this phase, the method for data collection for the primary data is the interview. For the secondary data, the data can be collected from the journals, books and article. In the primary data collection that using interview as the method, the instruments that are needed is recorder to tape the conversation. Before do the interviewing, the criteria need to be listed such as how many people want to interview, what kind of people and the knowledge they have. In this project, the interview section will be

focus on visually impaired people and the design of the website. By constructing the possible questions, information regarding to the project can be collected. After collecting the data, it needs to be analyzing in order to get better understanding in next phase.

3.1.3 Phase 3: Design and develop the website

It is important for every online business owner to have a website that can gain the awareness of customers, can perk up their interest, make them have the desire to buy and take the action to purchase the product that have been offered. Yet, the design of website also should be accessible for the visually impaired customers whereby the can navigate the site easily. Other than that, the design of the website must be appropriate with the proposed product in which the customers or visitors can get the right information.

3.1.3.1 THE SYSTEM

The website design is basically come from the interviews discussion. It needs to pay attention on the visually impaired needs and wants in order the website can meet their expectation.

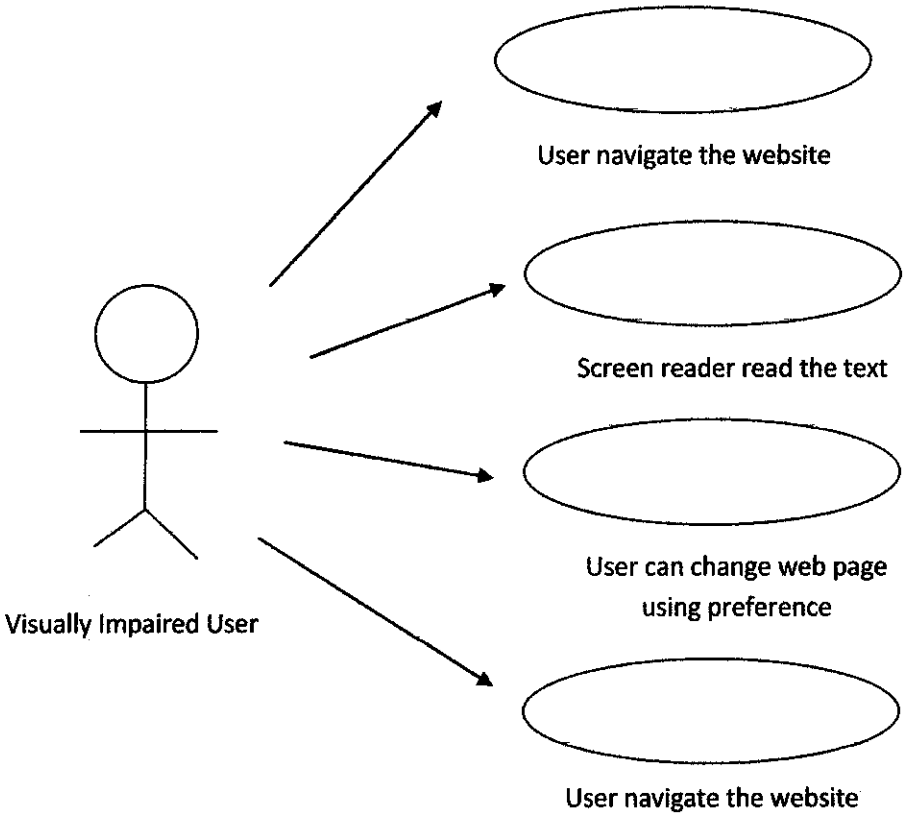


Figure IV: Use Case Diagram

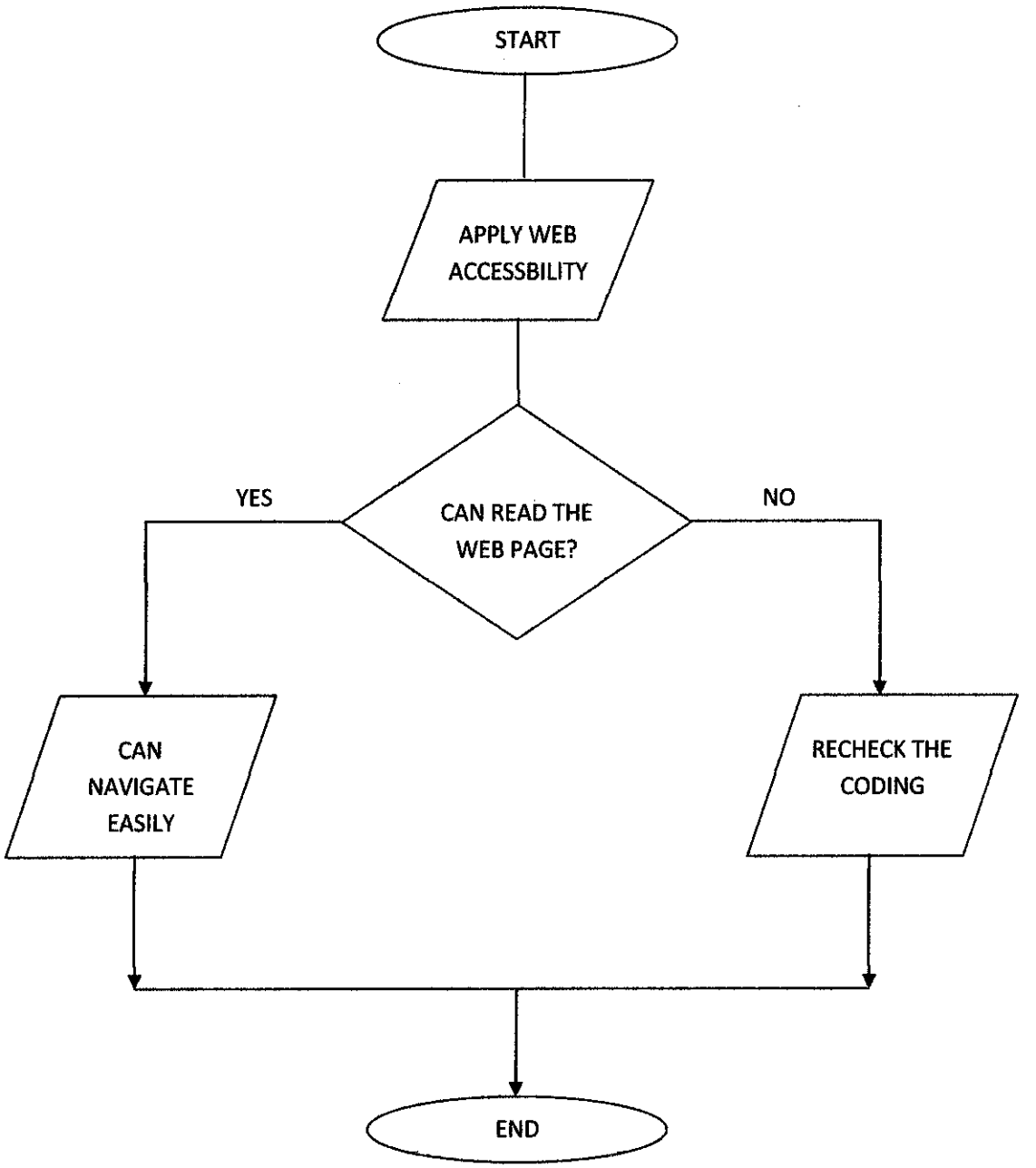


Figure V: Flow Chart Diagram

The website is created by understanding the web accessibility and the steps that need to be taken in order the web site is readable by visually impaired users. The most important things are the website should be in text based only, no flash video that cannot be read by screen reader, and use the ALT text to describe the images to them. If the ALT text is not use for the images, the visually impaired could not know as they rely on the screen reader to translate the text into voices. Hence, the ALT text is used to describe the images such as if tree image is put on the website and use the ALT text, the screen reader will read as "image: tree" and the user will know that there is a tree image on the web site.

Therefore, use case and flow chart diagram were created to see the overall flow on how the user navigates and the development of the website. The user testing feedback stated that the website is accessible and can be readable by screen reader. Nevertheless, it should be improvised to be more sophisticated and more professional so that it can meet the expectation of users, either normal people or visually impaired.

3.1.4 Phase 4: User Acceptance Testing (UAT)

After done the research process, data collection and develop the website, the last phase is about user acceptance testing for the website. In this phase, after develop the website; UAT is required in order to see the result whether the website meet the can be accessed by the visually impaired customers.

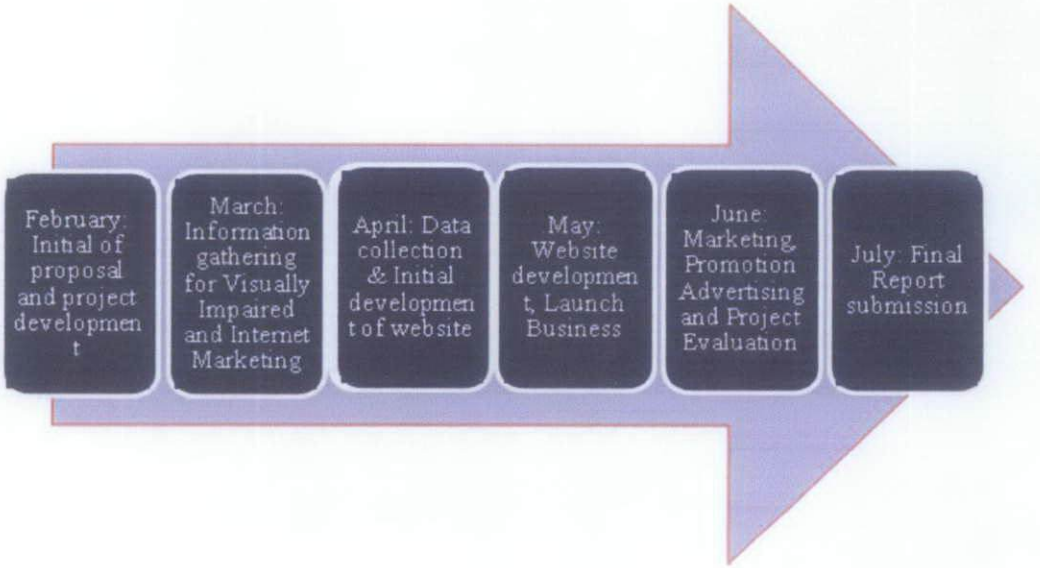
3.2 Proposed Tools / Equipments

-XAMPP

-Recorder

-Hand phone for calling purposes

3.3 Key Milestone



CHAPTER 4

RESULT AND DISCUSSION

4.1 Preliminary Study

4.1.1 Observation

For the first semester of the final year project, a few preliminary studies were conducted such observation and interviews. The objective is to find and get the knowledge regarding to website and visually impaired. First is to observe the website whether it have the necessities that could help the visually impaired in navigating the website such as preference site where they can change the text, colour background or may have sound to read the website.

4.1.2 Interview

To be more attentive and precise regarding to the project, the developer had conducted two interviews in order to get better understanding on how the visually impaired users use and navigate the website. The interviews were from the National Council Blind of Malaysia (NCBM) committee and Blind People Association for Perak Branch. From the interviews, developer get clear picture about the importance of using web accessibility for visually impaired.

4.2 System Interface

Figure VI: Homepage of website

Based on Figure VI, which is the sample or the first draft of website for this project. This the home page of this website whereby it shows menu for the user to navigate. The menus consist of Home menu, About menu, Preferences menu, Contact menu, and Feedback menu. For the Home menu, it will show the home page for the website, for About menu, it will show the details of the business and its products.

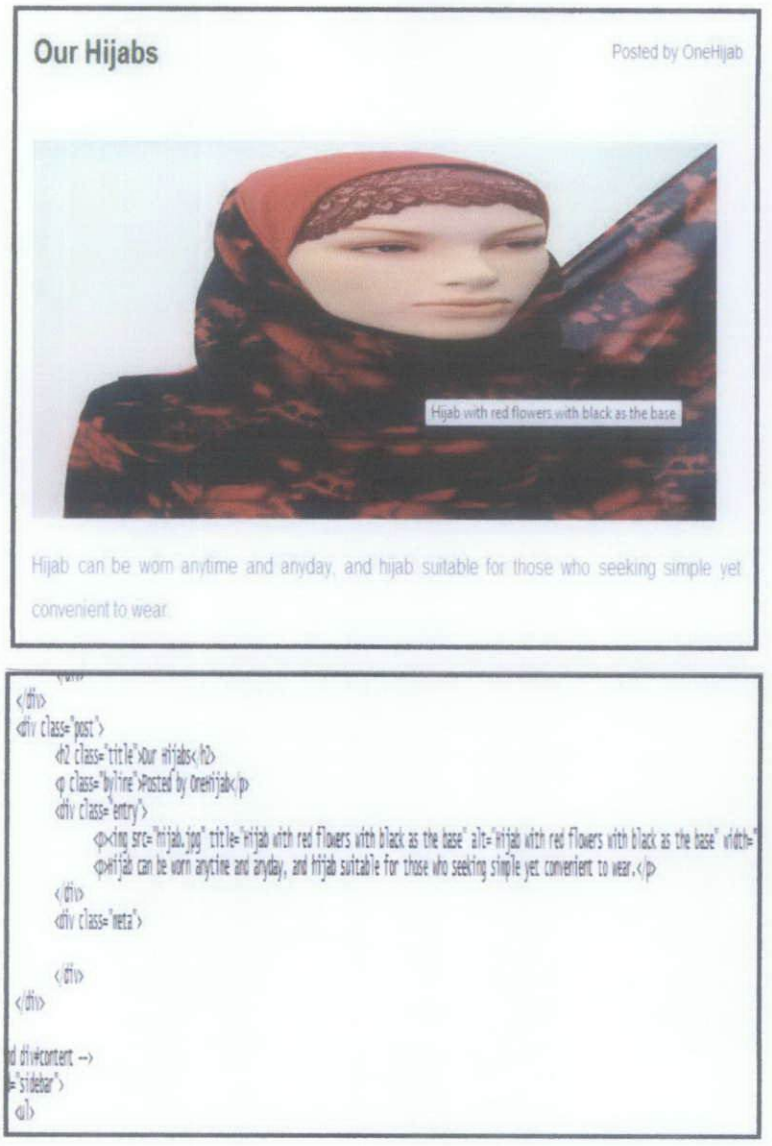


Figure VII: Example of using 'alt tag'

Meanwhile for Preferences menu, it is specifically for visually impaired customers whereby they can customize the web page according to their visual impairment such as colour-blind and low vision. For the blind, the website use the 'alt tag' for the picture and use the text based so that the blind can search and browse the products using screen readers (See Figure VII: Example).

Figure VIII: Preference Menu for Visually Impaired

Based on the Figure VIII above, the Preference menu is specifically for visually impaired customers whereby they can choose the size of text font and the colour of contrast according to their preference. There are three text size changes and also two different contrasts. The text size changes are the normal size, the large size and the larger size of the text. Therefore, the visually impaired people do not need to use the magnifying tool to resize the text. For the contrasts, the blue colour is the medium contrast meanwhile the black colour is the high contrast whereby customers can choose by clicking over the images.

Figure IX: Contrast and Text Large of the website

For the preferences, visually impaired customer especially the B1 category can choose the contrast and the size of the text to suit their needs in viewing the website. For now, only two contrasts have been done which are the medium contrast and high contrast. The colour of the background must be dark compare to the colour of the text in order to bring out the contrast (See Figure X). Then, the size also can be change to suit their preferences.

Figure X: Feedback from customer

For the Feedback, customers can give feedback either regarding to the products or the website whereby it can be improve in order to meet their satisfaction as shown in Figure XI above. The form will be send to the business e-mail and get the result of the survey or feedback.

4.3 Discussion

The system has been tested by both visually impaired and normal people after the system was almost completed. The system is tested by several normal impaired and one visually impaired. They were asked to navigate the website and answered some survey to see the feedback. The aim for the feedback to see the how the preference site help the visually impaired people and for the visually impaired is more on the readability and accessibility of the website.

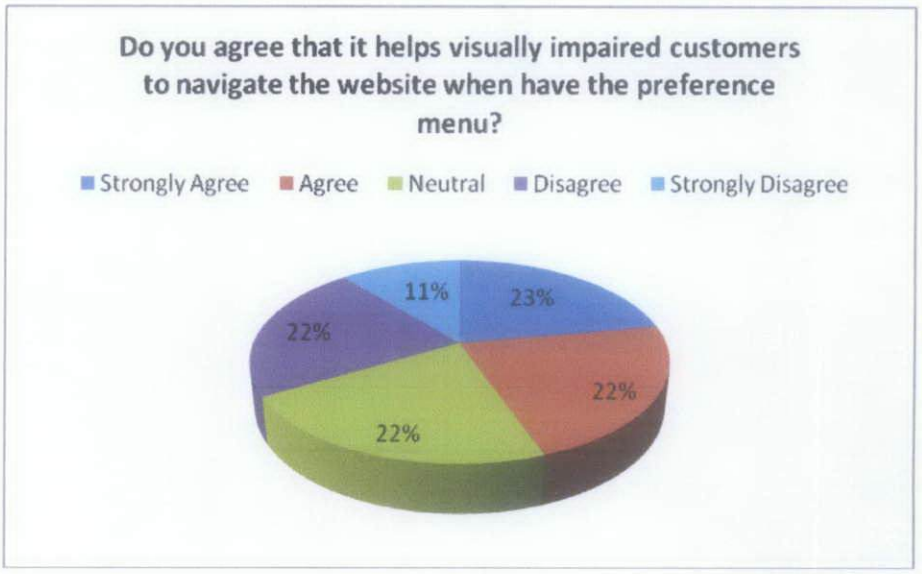


Figure XI: Feedback from normal impaired for the system testing

The results above shows how many people are agreeing about the preference menu can help the visually impaired. 23 percent are strongly agree meanwhile 22 percent are agree and neutral with it. From the feedback, the majority are mostly agreeing that the preference menu will help the visually impaired in navigating the website easily.

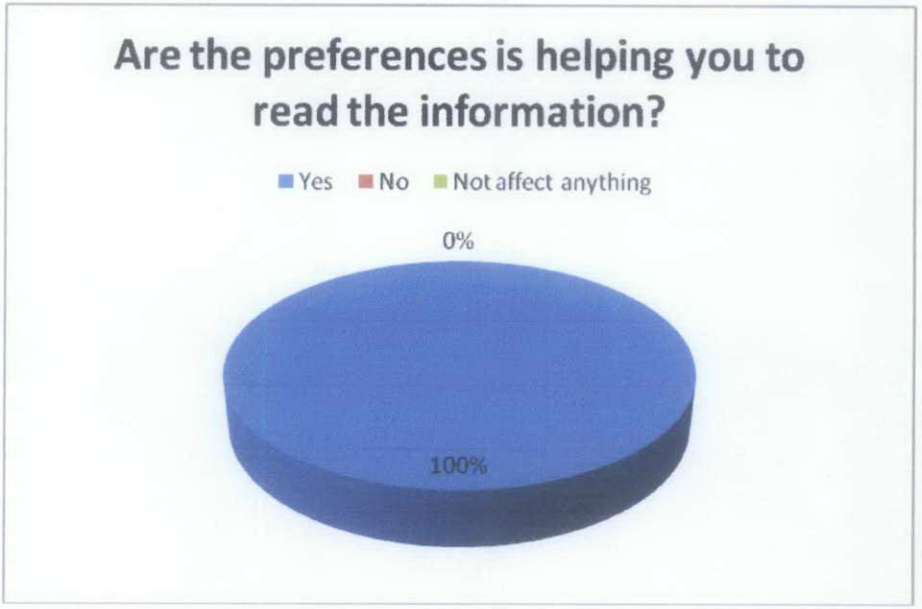


Figure XII: Feedback from user testing

From the result above, the users were agreeing that by having the preference menu was helping them in term of reading the information. This is because the preference menu can be change like the size text and the colour-background according to their preference. This is also proving that normal impaired also realized the good thing of having preference menu.

For visually impaired testing, the users stated that the screen reader software like JAWS can read the website and it is accessible from them to navigate web. They are also mentioned it was easy to find information and images were described to them as developer use the ALT tags.

CHAPTER 5

CONCLUCSION AND RECOMMENDATIONS

5.1 Conclusion

After two semester of researching, data collecting, developing and testing the system, this project shows the importance of understanding and applying the web accessibility whereby it can help the visually impaired in navigating the website easily. The preliminary studies help in getting a better picture about the visually impaired and on how they navigate the website before developing the system. From there, developer knew the problem and needs that visually impaired faced when they accessing a website.

After developing the system, users testing were conducted to get the feedback in order to know whether the objectives are achievable or not. The results from the feedback were positive as visually impaired can access the website as the screen reader can read the web and preference menu help them in changing the size of text and also the colour-background.

5.2 Recommendations

For future improvement of the system, the recommendations were suggest by the users and examiners whereby:

a) To have sound when mouse / cursor move over the menu
b) To improve the HCI for normal impaired

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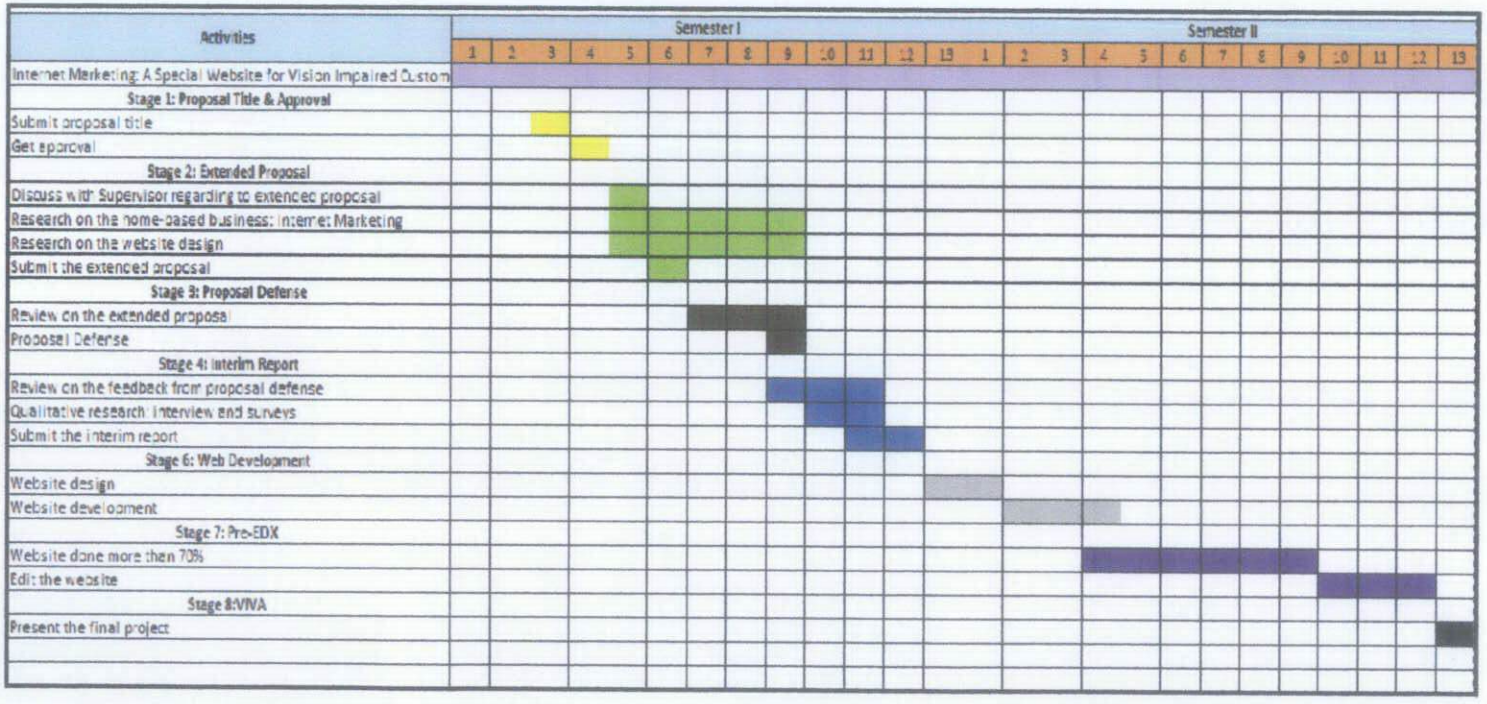
APPENDICES

APPENDIX A: GANTT CHART



APPENDIX B: INTERVIEW

First Interview

On 26th of March, I did an interview to one of the National Council for the Blind Malaysia (NCBM) member which is Mr. Moses Choo who is a blind man at NCBM headquarters in Kuala Lumpur. Before the interview started, Mr Moses was briefed about the project and the objectives. The 30 minutes interview give me lots of data and information regarding to the ways of a visually impaired in navigating the internet and website. The interview has been documented below.

Do you access internet?

Yes, I do. I do most of my work by using the computer and internet.

What kind of software did you use to assist you when you access the internet?

I use JAWS software that helps me in navigating the web page. But there are lots other software such as THUNDER.

Do you find the any website is accessible?

Yes, I do find some that are accessible for the JAWS to read the language. One of the website that I like is the **afb.org** because they design specifically for the visually impaired people like me; who is blind, for the colour-blind people and also the low vision. Bad website is when they design colourful and attractive for normal sighted but for people like me; it is difficult to know what kind of information or picture that they load on the web page.

What is the most important thing in a website for visually impaired can navigate easily?

The basic rule is to apply the rule of web accessibility. All the content including picture must be in textual based. Never use graphic based where the software could not identify it. The designer must use the ALT text for the picture. Other than that, the title on the top page of the web page must be accordingly to the menu that will be click. For example, if I click the Home menu, the web title should also have the Home at the end of it. I would like to advice you do not put many links in one page because it confusing could occurred sometimes. Then, people like us, the visually impaired would face difficulties in navigating the web. One more thing, about the picture, the description that you put must be the same with the picture.

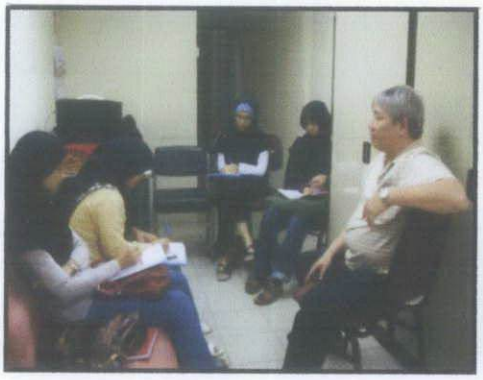
Have you ever done any online purchasing?

Of course I have. I am also like other normal people, can buy product online. We, the visually impaired use the screen reader to help us in searching and purchasing online. Other than do online purchasing, I also use internet banking in paying online payment.

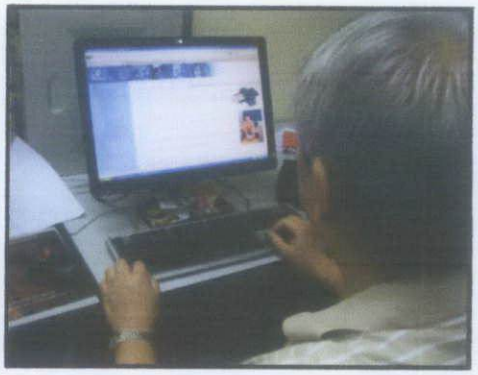
What do you expect from my project?

I think it is good as you do aware the needs of the visually impaired users. Actually, there is one law in Malaysia for the protecting the right of people with disabilities. The web must be for everyone to use, either normal or visually impaired people. In US, this kind of law already implemented a long time ago and most of the websites are accessible. So, for your project, it is better if you include feedback menu on your website in which you can get the feedback from the visitors, especially the visually impaired.

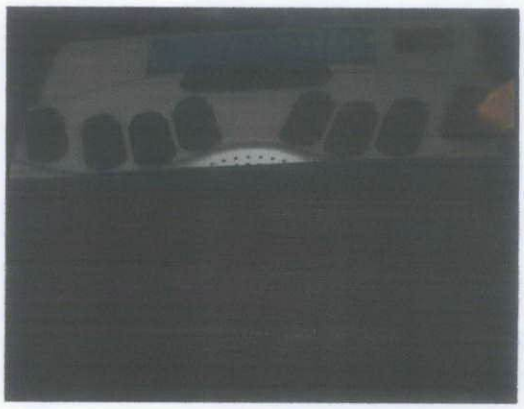
Hence, the information that had been gathered from the interview is useful and gives a better understanding the needs and wants of visually impaired users on a website. The most important element in designing the website is to apply the rule of accessible web on the project's website.



Interview with Mr Moses



Mr Moses uses JAWS to navigate the internet



Screen Reader Devices

Pictures were taken from the first interview with Mr. Moses

Second Interview

On 1st of July, I did second interview to one of the member of Blind People Association Perak branch in Ipoh which is Mr. Jeff Wong who is a blind man at there. Before the interview started, Mr Jeff was briefed about the project and the objectives. The 20 minutes interview gives me lots of data and information regarding to the visually impaired people and also the importance in designing website for visually impaired. The interview has been documented below.

Do you have encounter problem when you cannot access to the website?
Of course I have. There is one website that I absolutely cannot access and the screen reader cannot read the line because it is full with flash and video.

How about other website that you can access?
Well, Lelong.com.my is one of the website that I can access and navigate due to their accessibility. It means that their web page have met the accessibility requirement whereby the JAWS software can read the line behind the web page.

What do you think if an online business that has the preferences site for the visually impaired can change the web page?
It would be better for them. Actually blind people have three categories which are B1, B2, and B3. They were blurriness, partial sight, and completely blind like me. As Mr. Chairman here, he is B2 category because he is not defect from birth, but his sightless got due to his health problem. I know that many of the online business do not do the preferences because the demand is low.

What is your advice if I want to design a website that visually impaired people can access?

I emphasize you to use HTML and remember do not include any flash or video as the software or the screen reader could not read them. If you put any images, please use the ALT text to define the images as the screen reader will read to us to define the images.

Hence, the information that had been gathered from the interview is useful and gives a better about the visually impaired people and also needs and wants of visually impaired users on a website. The most important element in designing the website is to apply the rule of accessible web on the project's website.

APPENDIX C: SURVEY

Visually Impaired Customers Survey
How easy are you with:

1. The usage of the website

- ○ Very easy
- ○ Easy
- ○ Neutral
- ○ Difficult
- ○ Very difficult

2. The navigation of the website

- ○ Very easy
- ○ Easy
- ○ Neutral
- ○ Difficult
- ○ Very difficult

3. Easy to access the website

- ○ Very easy
- ○ Easy
- ○ Neutral
- ○ Difficult
- ○ Very difficult

4. Find the product and information easily

- Very easy
- Easy
- Neutral
- Difficult
- Very difficult

5. Can the JAWS or screen reader read this website?

- Yes
- No

Internet Marketing: A Special Website for Visually Impaired Customers

Visually impaired people: Blind and low vision people.

1. What do you think about the interface?

   - ○ Bad
   - ○ Ok
   - ○ Good
   - ○ Need to improve

2. How easy are you to find the product and information?

   - ○ Easy
   - ○ Neutral
   - ○ Difficult

3. Are the preferences is helping you to read the information?

   - ○ Yes
   - ○ No
   - ○ Not affect anything

4. Is there any internet marketing / online business have the preference menu for visually impaired?

   - ○ Yes
   - ○ No
   - ○ I do not know

5. If yes, please state the name of the website:

6. Do you agree that it helps visually impaired customers to navigate the website when have the preference menu?

	1	2	3	4	5	
Strongly Agree	○	○	○	○	○	Strongly Disagree

7. Do you agree that if internet marketing / online business have the preference menu can improve the business?

	1	2	3	4	5	
Strongly Agree	○	○	○	○	○	Strongly Disagree

8. Please comments about the website that can be improve: