

PSYCHOLOGY OF WEB DESIGN; ATTRACTIVE VISUAL CUES FOR WEB USERS IN SRI LANKA

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ABSTRACT

The main goal of the study was to enhance the attractiveness of Sri Lankan web sites on the basis of Psychological aspects. It helps to bridge the gap between user and the web site through feedback given for web designers to create web sites, which cater the interests of web users in Sri Lanka through developing user satisfaction. The study was done using qualitative research methodology. The data was collected through a semi-structured interview, which was refined from a pilot study. Six participants were selected that included three males and three females, between the ages of 20 - 40. The sample was selected from the Faculty of Arts, especially from the Information Technology Center, University of Peradeniya. The current research investigated all the visual cues commonly used in web sites through psychological aspects. The results indicated 16 themes and some themes contained sub themes. The themes have revealed how to design and allocate visual cues on web sites. The first four themes covered overall aspect of web designing, those were; user friendly features, attractive features, features in visible area and methods of allocating information. The rest expressed visual cues separately, namely; the main menu, the search bar, the scroll bar, marquee tool/text, modelers and stars on web, hyperlinks, symbols, animations, images, text, colors and white space. This research can be extended further, by the analysis of gender differences in attractive visual cues or auditory cues in web sites and psychological effects on web sites for youth in Sri Lankan context.

Key Words : Web Design, Attractive Cues.

INTRODUCTION

The rapid development of globalization is taken place in the fast moving world. The time which needs to communicate between two countries has been reduced to a minute, via new technology. And also it helps to bridge the gap between human capacity and the productivity more efficiently. A critical turning point occurred in the resent history is the recovery of User Interface Interaction and had been a pioneer in technology. "Human-computer interface can make a substantial difference in learning time, performance speed, error rates and user satisfaction. Commercial designers recognize that systems that are easier to use will have a competitive edge in information retrieval, office automation, and personal computing" (Murrell, 1998). This contemporary issue, followed by numerous innovations and it has come across with potential out come; WWW (World Wide Web). There is a prominent issue which links WWW is the designing of web pages. The capacity and the efficiency of web designing are directed to enhance the usability of web sites. To promote the usage of web sites, it should be entitled with numerous features which can grab user's eye as well as the mind.

Web site should be promoted and implemented according to the requirement of the user as well, to reach his/her mental satisfaction. 'Satisfying needs and wants through

an exchange process (Kotler, P.). Therefore, it's compulsory to focus on customer needs before developing the product (Net MBA.com, 2002-2007). To obtain a successful, attractive, effective web site, the acquisition of psychology for web design is important as web sites are being created to attract the web users. Precisely, the research bridges the gap between user satisfaction and marketing via psychology of human being. Therefore, subject areas of Psychology and Web Designing are relevant for today.

Research Significance

Web designing is obtained critical place in the fast moving world and the usage of web designing has been increased. Besides, the usability of web designing, numerous researched have been addressed on this particular area to come up with new finding as well as to facilitate web designing to a great extend. Even though world web market contains great competition over the web design, Sri Lanka has a lower in progress on it, which might be the reason, that people call this subject as 'modern subject'. As a result, researches have been done few and far between on the topic of web design. Therefore, carrying a research on web design is essential on the Sri Lankan context.

While the web design is being crucial research area on the Sri Lanka, another massive combination is Web Design and Psychology. Web designer can not be achieve greater success with out the help of psychology as in every single design on the web can't be created without the knowledge of Psychology of human. As the web designers create web sites for the human being, web design has to be fulfilled with psychology of human being. Eventually, many researchers have made effort to come up with new relations between psychology and web design in various aspects; cognition, thinking, usability and gender etc. As well as they tend to find out modern issues for the development of web design and on the other hand it is being given help for the development and the increase the efficiency of web designing in Sri Lanka, carrying out current research is significant. In other words, Sri Lankan web designing is poor compare to the rest of the world. Hence enhancing the efficiency of web designing in Sri Lanka is critical.

Research Objectives

I suppose to conduct this research to find out issues on web designing with related to psychological point of view. This paper is an attempt to find out attractive visual cues of web in the context of Sri Lanka. Short term objectives of the research are; provide opportunity for web users to comment on the web sites and find out visual cues which attract web users to web site. Whereas, to find socio psychological aspects on web site, to provide designers with knowledge about culture specific product design, to enhance the attractiveness of Sri Lankan web sites, to create competitive web market throughout the world, to promote web designs with new psychological aspects, to attract people through the means of a new approach and to improve demand of local web design are the long term objectives of the research.

LITERATURE REVIEW

HCI, Designing User Interface, WWW, Web Design and Culture of Web Design

The most appropriate entrance for the following research is to get the clear idea of the Human Computer Interaction (HCI) as it is encountered the origin of web designing. The term Human Computer Interface refers to the way a person experiences the computer, its application programs, hardware components, output devices and functionality (Shneiderman, 1986). On the other hand, it is being strived to reduce the gap between user/human and the computer. The user interface is the part of every computer system that determines how people control and operate that system. When the interface is well designed, it is comprehensible, predictable, and controllable; users feel competent, satisfied, and responsible for their actions (Designing the User Interface: Strategies for Effective Human-Computer Interaction, 3rd edition, Shneiderman, 1997, p639).

Murrell (1998) discussed several aspects together with user interface design in relation to the South African user community and some related aspects are; Culture , Graphic Literacy ,Language, ,Navigation ,Learning Styles ,Accessibility for the Disabled and Color Display and Fonts by “Human Computer Interface Design in a multi-cultural multi-lingual environment”. Interface design is widely used in WWW. The WWW is being contained millions of web sites which stand for numerous types of purposes. The usability of internet and the importance of web designing grow faster simultaneously as the usage of web sites leads to create more attractive web sites by the help of modernizing web design.

The research has been carried out on web-based training tool for design followed by design of training, design of content, design of instructional interface. The work also identifies critical design guidelines based on graphic design, information design and instruction design. (Balasubramanian, 2002) Hence, the principles for design of Web interface (2007) expressed by Prof. Hsien-Hui Lee (2007); the color of script shall be distinctive against the background color with proper font size. Font 16 is recommended for Chinese characters, User interface in captions, icons and fonts shall be consistent, standardized operation factors, description information such as initial visibility, readability and Aesthetic expressed by Nielsen (2006).

The art of web designing vary in accordance with the culture which the particular web site stands for. Barber W. and Badre A. has been addressed a research on “Culturability: The merging of culture and usability”. This study makes great contribution on the development of web design together with culture. The research discussed, in detail, encompasses a large population of site categorized by country of origin, language and gender and generates a list of cultural markers, which may prove to distinguish cultural specific design elements.

Cognition of Web Design

Web designers target should be the cognition of the users. And the usage of the websites varies in accordance with information, out look, components, visual cue and the content. Therefore, understanding and applying principles of human perception, attention, and cognition is critical to good web design. “Useful principles can be drawn from the sub-domains of sensation, perception, attention, memory, and decision-making to guide us on issues surrounding screen layout, information grouping, menu length, depth and breadth” (Dumais S. & Czerwinski M. in 2001).

One can also argue that all web sites incorporate with the kind of Psychological process.

While focusing on attention in related to web sites, the huge attractive posters were being ignored by the users of web visitors. To find out the reason for the particular aspect Norman and Donald A. had been conducted a study called “Banner Blindness, Human Cognition and Web Design” in 1999. People tend to ignore those big, flashy, colorful banners at the top of web pages. This is pretty interesting stuff, for the entire reason they are so big and obnoxious is to attract attention, yet they fail (Norman and Donald, 1999).

Attention and Theories of Visual Attention

This research provides important aspect of attention and the way of human cognition. And what is actually the attention is? It’s “ability to focus on a task, ability to concentrate and to the allocation of processing resources” (Anderson, 1995). In accordance to psychology it’s “focalization, concentration, of consciousness are of its essence” (James, William (1890). Attention can be divided in to focus, divided and automatic attention. Selective/focus attention consists two types; visual and auditory.

According to Treisman, in a first step to visual processing, several primary visual features are processed and represented with separate **feature maps** that are later integrated in a **saliency map** that can be accessed in order to direct attention to the most conspicuous areas in his feature integration theory (Treisman & Gelade, 1980, Treisman, 1992. 1993). Treisman distinguishes two kinds of visual search tasks, **feature search**; can be performed fast and pre-attentively for targets defined by primitive features and **conjunction search**; the serial search for targets defined by a conjunction of primitive features. She concluded from many experiments that color, orientation, and intensity are primitive features, for which feature search can be performed. (**Feature integration theory, wikipedia, 2009**)

Allport, Antonis, and Reynolds (1972) discovered that the degree of similarity between the two messages had a major impact on memory for the non-shadowed message. Means, auditory-presented passages were combined with auditory presentation of words; memory for the words was very poor. Whereas, the same task was combined with picture presentation, memory for the picture was very good. Moreover, Bottom-Up, task-independent, saliency-based selective visual attention theory by Ernst Niebur, (1998), Ullman, Koch (1995), Baldi, Itti, (2005) predicts which location automatically and unconsciously takes individual attention when perceive image. Zoom-lens model by Eriksen (1990) expressed relatively small area can be seen clearly, rather than other area.

User Attractiveness to Visual cues on Web

One of the researches; ‘Internationalization of websites; the next great challenge in interface design’, addressed on the importance of localization and internationalization of web design is consisted visual cues of web sites. This research also tend to address the visual cues on web design such as website name, images, symbols, pictures, gesture, and color. In the analyzing of images, symbols, pictures, gestures and color it is elicited that these visual cues are being varying in accordance with the culture. “To succeed in an international market, images must be carefully selected and designed” (Burgee, L. E., 2001). As previously mentioned researches elicit the visual cues which get attention of web users are differ in accordance to the culture, gender (Gloria and

Rod in 2006) and the type of the reason which the user seeks for. Alex Burmaster revealed gender attractiveness of web sites (2005).

User Satisfaction and Marketing

As mentioned earlier, needs and satisfaction of the customer is significant rather designing the product. With related to the current research, first the cognition of the human being has to be studied, before creating web sites for them. “Marketing is the social process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others” (Kotler).

Wang, Yi-Shun et al (2001) was conducted a study on an instrument for measuring customer satisfaction toward web sites that market digital products and services. This study develops a comprehensive model and instrument for measuring customer information satisfaction (CIS) for web sites that market digital products and services. 21 items were classified under 7 categories of customer user satisfaction such as; Customer Support, Ease of Use, Security, Digital Products/Services, Transaction and Payment, Information Content, Innovation. Hence this study elicits the importance of creating product under user satisfaction through customer support, ease of use. The finding helps to test internet marketing and End-user Computing in future.

Problem Statement

Given the above background knowledge and previous studies, it is determined that the numerous studies have been carried out on the area of web designing together with psychological aspect in different countries. And it is being emphasized that it is hard to find a research on web design and psychology on the Sri Lankan context. Moreover, studies on web design related to cognition, culture, gender, attention, user satisfaction and many more studies were taken to enhance the knowledge of the web design. With comparing to those researches it is being rare to find papers, which have done the topic of attractive visual cues on web for web users particularly in Sri Lankan context. Moreover, this research seeks to develop bridge these gaps by developing and evaluating the effectiveness of a web design in the Sri Lanka. Hence the research problem of this paper is **“What are the visual cues which attract web users in Sri Lanka?”**

METHODOLOGY

Participants

The study was conducted as qualitative research method and it was selected 6 participants including 3 males and 3 females. The age range of the participants was in between 20 to 40. Four participants were selected from the Information Technology Center of the University of Peradeniya. The ethnicity and religion of the participants were not taken in to an account. The summary of participants was indicated in following table.

Participants						
Gender	Male			Female		
Identification No	PM1	PM 2	PM3	PF1	PF2	PF3
Age	29	25	30	35	24	25
Occupation	Computer Instructor	Computer Instructor	Web Designer	IT Lecturer	Student (Arts faculty)	Student (Arts faculty)

Table 1:- Participants.

Interview Content

Mainly study was consisted with pilot study and the semi structured interview. First, the data was collected by using a pilot study which included 8 open ended questions (**See Appendix A**). The pilot study was constructed by exploring the literature review to create questions for the semi-structured interview. Second, the semi-structured interview was carried out by using 25 open-ended questions (**See Appendix B**).

Procedure

The pilot study was presented by using 8 questions, which was constructed by referring to the literature review. The pilot study was conducted in the IT center of University of Peradeniya from a male participant who was a computer instructor. On the basis of pilot study, 25 open-ended questions were constructed for 6 participants for the semi-structured interview, which was carried out second to the pilot study. The particular pilot study was carried out to find current web design issues and cues according to the Sri Lankan context to create questions for the semi-structured interview. Even though, the researcher was handed with contemporary issues of web design to construct questions for semi-structured interview, the questions were constructed by using a pilot study, to obtain effective results.

The data was collected through semi-structured interview. All participants were interviewed on a one-to-one basis and the interviews were recorded; 45 minutes per each. All the participants were conducted in the Information Technology Center of University of Peradeniya. Except other participants I had to make an appointment to conduct the interview from one female participant. All participants were debriefed as to the nature of the study at the beginning of the interview verbally and were encouraged to make true details in accordance with own interests. It was made clear to them that they were not obliged to answer any questions that they didn't want to and that they were able to leave at any point of the interview if they didn't wish to continue. They were informed to make use of computers plus Internet, if they were wishes and to make them comfortable in providing answers. Also they were assured that their identities would be kept anonymous. At the end of the interviews, participants were given the opportunity of asking questions and clarifying any issues regarding the research, and to add any other relevant comments.

Data Analysis

The data was analyzed by using thematic analysis. The recorded interviews were transcribed. This was significant in the research as it is the one of the most time-consuming works of the study, which needed patient. Careful and clear transcriptions were helpful for a subsequent analysis and fruitful discussion. The transcription conventions used were largely based on Malson (1998). Because the data were already thematically determined by the scheduled, it was natural and helpful in the analysis to make themes under several topics. Moreover, as the data were descriptive, the data analyzed was carried out by constructing themes under several topics together with sub themes. Themes and sub themes were provided to identify, findings of the research easily. Most of the themes were contained sub themes. In addition, which is unique to the research was, some of the themes were become a main theme and a sub theme simultaneously. To make analysis clear, some results were sorted in to tables as well.

RESULTS

First four themes were constructed to attain a general idea of web designing such as; user friendly features, attractive features, features in visible area and methods of arranging information on the web. And the rest of the themes were identified specific features of the web sites; some of them were consisted main themes together with sub-themes. Some themes have become main theme and sub theme simultaneously in the current research.

User friendly features

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Loading time		√	√	√		√
Main menu	√	√		√	√	√
Drop up menu	√	√				
Icons	√	√				√
Hyperlinks		√	√	√		
Buttons		√				
Colors			√		√	
GUI	√	√			√	
Wording				√		

Table 2:- The user friendly features in the web sites.

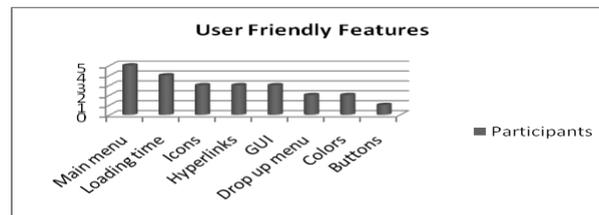


Chart 1 :- User friendly features in web sites.

Attractive features of the web sites

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Color		√	√	√	√	√
Image		√			√	√
Animation	√			√		
Graphic	√			√		
Hyperlinks			√			√
Slogan						√
Logo			√			
Text (font size)			√			
Search facility			√			
Others		Concern, structure of web sites.	Consist general structure of the web sites.		Chatting facility.	Content (information)

Table 3:- Attractive features of the web sites.

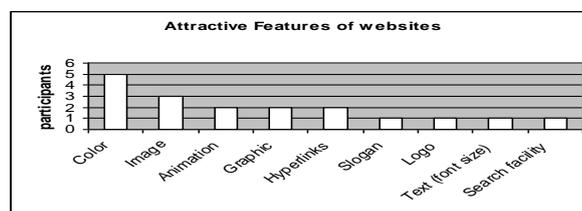


Chart 2:- Attractive features of websites

Features that should be in visible area

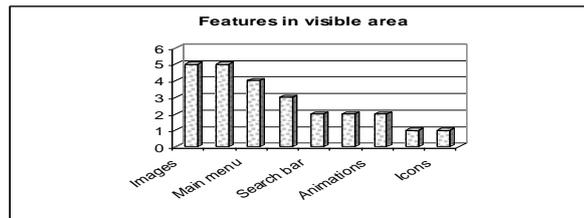


Chart 3:- Features in visible area.

Except one, others said images and small description about the organization or the site is critical to visible in the home page. Main menu; four participants, logo three and two participants liked to have search bar, hyperlinks and animation each. Finally, color and icon was said only one.

Method of allocating information in the web sites

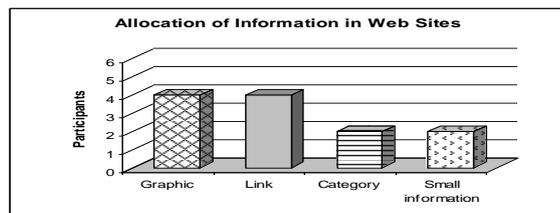


Chart 4:- Allocation of information in web sites.

The Main Menu, The scroll bar, Hyperlinks

Simultaneously, main menu is a sub theme in ‘user friendly features’ and ‘features in the visible area’ which was described earlier it’s as well as a main theme. The results were; all voiced using large images make disruptive. Two female liked both top and bottom main menus, whereas, other two of them suggested top or left and the rest two was top.

All participants stressed that the home page should be small one with shorter scroll bar, as web users don’t like to have long page in the home page, as it’s not attractive. Whereas, having long scroll bar is user friendly in other pages of the site.

Participants suggest it depends on the context. The results revealed usage of hyperlinks provide user to navigate easily through web sites. Except one other suggested to have blue text in white background to be as color of links and two of participants stated yellow and red is not suitable for links

Search bar

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Location	At top – right side	At top – right side	At top – right side	At top – clearly visible	At top – clearly visible	At top – clearly visible
Search bar with a category				√	√	√

Table 4:- Locations and types of search bar.

Marquee tool/text

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Age	29	25	30	35	24	25
Attractive	Yes	Yes	No	little	No	No
Others	Highligh things	More details in small area (new, ads)	Use as sparing wheel	Not in other pages	Time consuming	Small amount of text is good

Table 5:- Summery of participant's views on marquee text.

Symbols

Symbols can be analyzed by logo, icons, symbols in address bay and pictures. Participants reviled icon should convey the message efficiently with providing information. It should contain relevant image with suitable color. Therefore, naming the icon provides user-friendly, as some icons can't be identified. It should be anywhere, which catches user's eye. When browsing several web sites, the user can easily and quickly select appropriate web site, which she/he seeks for by icon in the address bar.

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Position	Top center	Top	Top -right (Not middle top)	Top left or right	Top left or right	Top-right
Size	Medium 1/16 page	Medium	1/5	Medium 1 inches square	Medium	Middle size

Table 6:- Position and Sizes of the logo.

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Position	Where it's visible.	Top Where it's visible.	Top or bottom Where it's visible.	Top & bottom	Top (Not bottom)	Top Where it's visible
Size	Small	Small	Size that easily seen.	Small	Small	small
Color	Match with the background.	Blue in white background.	Not too dark and light.	Blue in white background.	Blue in white background.	Blue in white background.

Table 7:- Position, Size and Color of the Icons.

Animations and images

Participants	PM1	PM2	PM3	PF1	PF2	PF3
General locations of animations.		-Top (in the banner) -Depends on the site	Top(below the logo) -Depends on the site		-Top (not in bottom) -Depends on the site	-Top -Depends on the site

Table 8:- Locations of animations in the web sites.

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Should be	Cool color	Cool color Light green	Light color Light blue	Cool color Blue color Green color	Dark color	Cool color Blue color
Should not be	Red		Red	Red / gray	Light color	Red / yellow

Table 9:- Animation and color

Three participants stated it conveys information and all agreed it's attractive and not to use more of them. Typically, in educational or kids' sites It can be used in moderate level. Participants stressed, animations could be highly used in commercial, children site, movie, games and program animations sites. All the participants cemented the idea of 'text can be used within the animation'. One participant expressed her idea to make more attractive of using text in side the animation. That was made the text color changing and creates text moving within the animation. Images were explained same as animation. All emphasized image can be attractive by highlighting (borders, embosses, 3Ds etc)

Text

Some important words can be highlighted by using bright colors such as red or multiple colors. Some participants voiced out, 'it's more attractive Italic or Bold options rather than using multiple colors.

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Font size	12 or 13	12	12	12	14 or16	12 or13

Table 10:- Font size of the text in web sites.

Colors

In accordance with the participant's expressions, though the color of web sites depends on the sites, the appropriate color selection has to be done relying on the color of the logo. And rest of the pages should be created in accordance with the home page. In addition, the color of the banner has to be strike out and it should be consisted in rest of the web pages continuously. Moreover, a male and a female participant strived to say same background color and standard fond color have to be used through out the web site. In generally usage of color in web sites as follows;

Participants		PM1	PM2	PM3	PF1	PF2	PF3
General back ground color	Light colors	√	√	√	√		√
	Bright colors					√	

Table 11:- Usage of color and text in web sites.

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Max. # of colors	2 or 3 (background)		2 or 3 (text)	4 or 5 (text)		2 or 3 (text)
Like / dislike	ok		dislike	Like	dislike	Dislike
Comments	-Should be light colors		-Not attractive -Keep text simple	-can use for highlight		

Table 12:- Usage of multiple color in web sites.

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Preferred text color in white background	Red	Blue	Black Blue	Black	Red	Blue
Like to have		Green similar to white	Black for text	Black for text		Blue for text
Dislike color		Bright colors	Green Red	Red :highlight only	Yellow Orange	Gray
If use background (dark color)	Maroon	Dark color				Dark color Dark green
Then the text color	Yellow Cream Light G	White Luminas				Cream Light yellow
If use background (light color)		White, Pink Light soft gray	Light		Light White	Light White
Then the text color		Blue Black	Black		Blue , Red Green	Blue Black
Colors that makes web site attractive					Green, Blue Purple, Red Peacock B.	Green, Blue, Purple, Red, Pink

Table 13: - Color of text and background with examples.

White space

Participants	PM1	PM2	PM3	PF1	PF2	PF3
Use white space	No	No	No	Yes	Yes	Yes
Other				Get edge	-Attractive - Clearly identify other features - Can use any color for background	-Not disruptive - Clearly identify other features

Table 14:- Usage of white space in web sites.

DISCUSSION

Attention is bound with the human cognition and this can be elicits by referring to attention theories which were described in the literature review. By evaluation human satisfaction and their requirement of web site, leads to create more attractive web sites for customer. Hence, that is a customer satisfaction via marketing. Initially, it's critical to mention that, most of the themes which were expressed here, were linked with the visual attention theories of Bottom-Up, task-independent, saliency-based selective visual attention theory (Ernst Niebur et al, (1998) and Feature integration theory (Treisman, 1998). Especially, according to the Bottom- Up, task-independent, saliency-based selective visual attention theory, the individual seeks to get attention of particular image, or the map through the combinations of color, intensively and the orientation. Hence, visual cues which expressed here catch color, intensively and the orientation. Not only was that, but also participants attracted to visual cues rather than auditory cues. (Allpot, Antonis, and Reynolds (1972)) Therefore, it indicates that visual attention plays major role to get the attraction of websites.

The user-friendly features in web sites

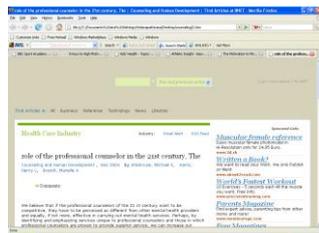
The site should be user-friendly, with the interface and navigation simple and reliable (2009 Wikipedia). Hence, current research has found out the user-friendly features in web sites. With referring to Table No.2 (pg7), most effective user-friendly features are loading time and the main menu among the rest. Because, those provide navigate through web sites easily. And followed by drop up menu, icons, hyperlinks, colors, and GUI (Graphic User Interface are make user friendly. Refer Chart No. 1 (pg7).

Attractive features of web sites

According to Table No.3 (pg7) there are no gender differences in features, which make web sites attractive. Windmill Software Ltd stated the way designer achieve clarity in his design depends on how he arrange the screen, present the data and use color in 2009. The most common attractive feature is the color and structure of the web sites (Refer Chart No.2 (pg7)) Because of the information in the web site should be relevant plus the layout should be attractive. With related to Wikipedia emphasized, the substance, and information on the site should be relevant to the site and should target the area of the public that the website is concerned with in 2009. This will be smoothening by using images, animation, hyperlinks and logos.

While making comparison between following pagers with related to above mentioned attractive features page A is less attractive with comparing to site B.

E.g.:-



Web Page: A



Web Page: B

Image 1:- less attractive webpage. (Page A) Image 2:-An attractive page. (Page B)

With compare to Page A, Page B has usage of attractive colors, hyperlinks search bars, images, logo, link and text in appropriate manner. But according to participants, typically they tend to prefer not to use bright colors but the items of the web sites must be contrasted to each other. Hence when the web sites consist needs of customers automatically it provides high web market (Wand.2001).

Features that should be in visible area

Visibility is one of main criteria, which were stated by Nielsen in 2006 in describing, key information should visible above the fold so user can see it without scrolling. With comparing to Nielsen's statements current research participants also emphasized, small description about organization or site has to be visualized in the home page to get an idea of the site at first glance. Main menu provide clear knowledge of the content of the web site. Two principles of ways of interactive are content easy to search and with pleasant visual effects in the study of HC interaction (Lee, H, 2007). Hence, features in the chart no.3 (pg8) gives web designers to how to create web site to grab user's attention. "An organization should be able to identify the needs and wants of the customer for satisfaction of these needs results in a healthy turnover for the organization" (learnmarketing.net 2009).A female states banner and advertisements are not attractive. Banner blindness by Norman and Donald found reasons of being ignored web banners (1999).

Method of allocating information in the web sites

Though web sites contain numerous information, by including all the information in the home page might leads to hinder the attractiveness. The meaning is processed without awareness of visual stimuli (Wright, V., 1975). The findings lead to make

information in more meaningful manner, by graphics (pictures, diagram, images etc) using sub headings, not compressed all data in the home page and clearly categorized (Refer Chart No.4 (pg8)). These provide user to navigate easy through web sites. One of the main criteria in constructing layout for a certain screen is readability, which elicits the easy to read Nielsen emphasized the texts in various columns in 2006.

The main menu

Main menu should provide all the information in the web site with giving the facility of visualizing the appropriate category that the user searches at a glance. With referring to results (pg8) using text with appropriate color contrast with the background and foreground or main menu with small images is attractive. The results directed to make an idea of having two types of menus are appropriated to be visible in the home page. One is, if the main menu contains more sub categories it's appropriate to display in vertical manner and when clicking on topic, relevant description would appear in the right frame. Establishing main menu on the top with drop up menu is suitable when it consist only few categories. Both vertical and horizontal main menu provides user to navigate through web sites easily rather than just having vertical or horizontal main menus separately. Because of most of the information can be allocated.

The search bar

Simultaneously search bar is sub theme in attractive feature/s in visual area as well as it is a main theme. With referring to result (pg8), the search bar should be allocated in the place where it clearly visible for the web users. Most of the participants preferred it on the top of the web. Refer table no.4 (pg8), One of the gender differences is all male participants prefer to have search bar at the top right side. Where as all female participants prefer to have any where at top where it's clearly visible. And all female participants like to have two search bars including one with category. In contrast, male prefer only the search bay without the category. According to that, female tend to get information via web sites by minimum effort. In contrast, males tend to grab what the thing that they are willing to find exactly.

The scroll bar, Marquee tool/text and Having modelers and stars on web

Referring to the result (pg8) containing all the details in the home page wouldn't be attractive as well as user friendly. Therefore, the home page should be consisted shorter scroll bar by providing small page. But, when it goes to other pages, it's better to have all the information in one page.

In accordance with the results (Refer Table No. 5 (pg9)) some prefers not to have marquee in the web site and not an attractive feature as time consuming and disturbing to eyes. But, if it contains only few amount of text, it could be attractive, especially for hot news. And also it shouldn't be run through out the pages as it's disturbing the users.

All most all the participants tend to state usage of modelers and stars depends on the context. That means stars could be attractive only in particular web sites and it might not attractive in educational web sites. If the web users, modelers have not allocated on the suitable sites, users might visit the site just to see the stars, not the content of the web site.

Hyperlinks

Results suggested (refer pg8), text size should be clearly seen and readable, general color of the text is blue with white background and content of the text is short but, meaning full but not red and yellow. Attractive ways of designing web hyperlinks are using image of animation with hyperlinks and using blinking hyperlinks. The research conducted by Galitz stressed the color of the text can also carry a meaning; “Chinese text should not be in red unless a very personal message is being conveyed” (Galitz, 1997). Hyperlinks with buttons are attractive and it shouldn’t be added images for buttons as it leads make disruptive site. But the text should be contrast from the background. Red link with button provide warning and female said, button color has to be use common color followed by the culture. For example, using green for “GO” and using red for “STOP”.

Symbols

Symbols are used to convey message without using words. The different types of symbols are logo, icons symbol in the address bar and pictures According to results (pg9) logo is important to be visible area where users can see easily in the web sites. And logo has to be published in all the pages, as some products are famous due to the logo. Generally, it has to be medium size and should be at the top-right (Refer Table No 6 (pg9)). The color of the logo shouldn’t be changed and its color should be match with the color of background. Icons are user friendly, should be simple and placed at top of the web page. It should small in size but clearly visible. Referring to table 7 (pg9) Its image should be relevant to the context and can be easily identified. Some icons can’t understand so use caption with the icon. (Have to named the icon ‘what does it stand for’) Generally, it’s attractive to use blue icons in white background. Symbol in the address bar is critical as it makes web users to navigate through the web sites more user-friendly. One explained; users are more familiar with the symbol of the web rather than the user name. If a user has done mistake in the address bar he will come to know that, he is in a wrong web site as the symbol in the address bar is not familiar to him.

Animations

Animation is attractive if it links with color (Refer Table No.8 (pg 9)). According to the Bottom- Up, task-independent, saliency-based selective visual attention theory, the more attraction of user is taken in the combination of color and intensity of the item which is focused (Ernst Niebur , 1990). Therefore, animation contains capacity of attracting web users. Besides, it helps to make user attractiveness; it gives information, messages to users without using text. But, it had to be relevant with the context and shouldn’t be over use. Because of it makes time consuming for loading and might be reduced user attractive.

The location of animations depends on particular site and preferred to allocate at the top of the web sites but some says below the logo or in the banner (Refer Table no 8 (pg 9)). Typically, in educational or kids sites can be used in moderate level. According to results (pg10) animations could be highly used in commercial, children site, movie, games and program animations sites where as moderately in kids and educational sites. The text can be used with in the animation or out side the animations. Few text should be consisted if text inside the animation and should be

contrast with the animation unless, it would disrupt the animation. Changing text option can be applied to enhance the attractiveness. Color blending through animation and the background was another significant factor. If the color combination is disrupting it might create less attractive web site even it uses animation such as, red in black background and it should be consisted with cool color such as, blue, green or light blue (Refer Table 9 (pg 9)).

Images

Same as animation, images also contribute to create web sites attractive. In accordance with the theory of visual attention by Ernst Niebur (1990), he had expressed the focusing of attention were filtered through color, intensity and orientation. Hence, images provide major role in creating web sites attractive. Image differs from animation from the feature of motion. Therefore, this section includes the areas, which were not mentioned under the theme of animation. By referring to results (pg10), links can be attractive if it was included images as well as image can be used as background to make web site more attractive. The especial attention has to be given for text, if image was used for background of the text. Here, the text should be readable and clearly visible. Therefore, text within the image has to be contrast from the image and shouldn't use heavy text inside the image. Moreover, for highlight images can be used shadows, embosses, and borders and those were suitable commercial web sites and not for web sites such as educational.

Text

Using text is significant for web sites as; it is the main way of conveying information. Results suggested text should be in readable format with few text rather than heavy text. Because, using large text in the home page might be confusing the user without user friendliness. In addition, using Italic and Bold options rather than colors can highlight important text. In the principle of design of web interface was expressed by Pro. Lee,H. (2007), Chinese recommended font size is 16. In contrast, according to current research the Sri Lankan web users prefer to use font size; 12 (Refer Table No.10 (pg10)). As expressed by Pro. Lee,H (2007) current research finding was stated out that usage of caption suitable for the place where it's appropriate. And it should be consisted only two or three words to convey the message by having appropriate color and font size by providing readable environment. Font color will be expressed under 'color'.

Colors

Color becomes a main stream in web as for each an every feature color is important and it contributes to enhance the attractiveness of features. Therefore, color followed by text, image, animation, background has to be blend nicely to get the attention of web users. Besides the attractiveness, which proved to web sites, it can be used to highlight important factors of the web sites as well. And if the web sites were filled with numerous multiple and bright colors web users might not be attractive and color should be selected upon logo and rest of the pages has to be match with it.

Using dark color for text is appropriate while using light color for background. As well as web site should be carried out a particular color theme through out the web site. In addition, using multiple colors can be highlighted but most suitable method is

using Bold and Italic options. Another critical factor was stressed by participants were using light color for web sites are most suitable rather than dark or bright colors (except filming sites) (Refer Table No. 12 & 13 (pg10, 11)). In accordance to Lee (2007) “The color of script shall be distinctive against the background color with proper font size.” these research participants stated the text color should be distinctive against the background color. Important word/s can be highlighted by using color (red) (Refer Table No.12 (pg10)). Color of the text can also carry a meaning. For example, Chinese text should not be in red unless a very personal message is being conveyed (and hence should not appear on most Chinese websites) (Galitz, 1997). In accordance with above research suggestions, Sri Lankan users tend to perceive red as warning whereas Chinese people using for personal message.

Most participants do not like to use multiple colors for text (Refer Table No. 12 (pg 10)) 2 or 3 is the maximum numbers of colors for text. In generally, web users prefer to like cool colors such as black, blue and green whereas they don't like red, yellow and orange colors. Most of the participants make example for using text colors if the background is dark. For examples, if the background is dark green or maroon, then the text should be cream, yellow, light green, luminas and white and vice versa. Text should be in readable format and have to use colors which are not disturb for eyes and female like to see bright colors such as green, purple, pink, red and peacock blue.

“What's gender preference for colorful products displays: men typically look for linearity, formality and a not too colorful whereas women look more color, informality and less linearity” Gloria and Rod (2006). According to table No. 20 females tend to like bright and colorful web sites rather than males and also if the background is white the text has to be use in dark color and vice versa. In using color for frames in the sites, one male stated while using dark blue for frame number one, the frame number two can be used one of lighter blue color.

White space

“Leave white space between paragraphs to enhance readability” (*Landsberger, 1999*), this state had become true by the findings of the current research. Female participants voiced to use white space whereas male explanation was not to leave white space as it's wasting space (Refer Table No.14 (pg11)).

CONCLUSION

Numerous applications were enrolled with the current research by providing effective contribution to the web designing in Sri Lankan context. In this paper the visual cues was discussed, in increasing quality and the standard of the web sites. This research provides guidance to enhance the web designing as Sri Lankan web designing is in primary stage. As web design is a controversial issue, the research gives sharp turning point to conduct researches on relevant area. The suggestions of research provide, attractiveness is not merely depending on using fancy colors. It should be designed with related to interests of web users in Sri Lanka.

Most of the output of the paper was discussed and some were compressed here. Especially the main menu should be allocated in the home page and should consider the loading time while getting attraction by using color, images plus animation without disrupting to loading speed. But, better to avoid over usage of bright colors. Web users can grab for web sites without reading the whole by the use of images, graphics and categorizing simply rather than using text can allocate information. If the

category consists more using vertical menu is appropriate. While clicking on the topic, relevant description would appear in the right. If the category consists few, horizontal menu with drop up menu is applicable and both style in the same is suitable if the categories are huge. While referring main menu, males prefer to use search bar at top of the right side, where as for female's it should be in top where clearly visible. Female prefer category of the search bar but not males. Using long scroll bar might not attractive/user-friendly for web users but better to use pages follow by the home page. Marquee tool is disturbing for eyes unless a top news. Hence, it's not attractive to allocate on Sri Lankan web sites. Hyperlink with buttons should not use images. But appropriate or meaningful color can be added to the button. Logo should be allocated at top-right in medium size with proper matching with the background while using same logo color continuously. Icons have to be simple in picture, which can be identified with small caption, small in size but clearly visible at the top of the page. Using appropriate symbol in the address bar is critical for commercial sites. Sri Lankan web users prefer to use 12-font size. Text should be readable without heavy text and important text can be highlighted by bold, italic or color (red). For web sites for females is better to use fancy colors such as blue, pink, peacock blue. Except filming web users prefer to use light colors rather than bright or dark colors. And web banners/advertisements should not be at the top of the site as it's not attractive.

Reducing of quality of data as participants were employed, unawareness of the ability/knowledge of web users considered in the sample, inability to actually measure the web usability of the participants, not a representative sample, hence not generalize, meeting biases as qualitative analysis are the limitation of the paper.

This research provides entrance for future research to conduct numerous researches on web design plus Psychology. The current research sustains various roots, which begins form it. This research can be conducted by representative sample and also by enhancing the population of the sample, further. Within on single study, it's impossible to touch whole the areas of web designing together with Psychology. Therefore, it would be good attempt, if future research carried out researches on this area. Such as, Psychology of web design; Attractive auditory cues, Comparison between visual and auditory cues on web sites, Usage of web sites in Sri Lanka, User friendly features of web sites in Sri Lankan context, Psychological effects on web sites for youth in Sri Lankan context, find visual cues in web sites separately, find gender differences in attractive visual cues in web sites, find attractive visual cues in web sites of children and adolescent and find out cultural differences of attractive visual cues on web

The usability of internet and the importance of web designing grow faster simultaneously as the usage of web sites leads to create more attractive web sites by the help of modernizing web design. Besides, it helps to bridge the gap between user and the web site, the subsequent feedback was given for web designers to create web sites which suit to the interests of web users in Sri Lanka.

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