CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In this chapter, the background and motivation of this study will be presented. This chapter will then presenting the research questions, objectives, and research scope. Organisation of the thesis will conclude this chapter.

1.2 RESEARCH BACKGROUND AND MOTIVATION

Web pages are made from a collection of Extensible Markup Language (XML) like tags, which are then used or interpreted by a web browser to control how the contents should be displayed on screen.

One of the segments or parts of a webpage is the content. Webpage contents are the part used to determine how useful or beneficial the webpage to the user. The quality of web contents is not just depending on the presented information but also the way it is designing. Based on eye-tracking studies done by J. Duckett, (2011) and Nielsen, (2000), users actually read just a few parts of a webpage and then decide the webpage is useful or not. In a separate analysis done by Nielsen, (2008), users were actually likely read only 20% of the text. The results from eye-tracking study and a study on how little the users actually read on a webpage prove that the qualities of the web contents have to be taken care seriously.
Since a webpage is made from XML-like tags called Hypertext Markup Language (HTML), it is intended to be very flexible. Web designers or web developers are free to choose among thousands of colours for text in web pages and backgrounds, and thousands of typefaces or fonts, to be mixed and match to design an attractive and informative web page. This flexibility, however, has introduced a dilemma that can reduce quality of web content. The wrong combination of colour for text and background or the wrong typefaces used may lead to problematic legibility.

Much research has been conducted recently on the legibility and suggestion to improve legibility has been made. On colour combinations, most of the researchers have suggested that the best colour combinations for text in web pages are the colour combinations that are very high contrast, which recommends black and white colour combinations. This recommendation, however, limits the creativity thus might lead to unattractive and less appealing web page. Some web designers or developers maybe experience difficulties if forced to use other than black and white due to following user requirements or corporate web page colour schemes.

On typography, most of the researchers recommend a text that is designed for on-screen viewing which is obviously optimised to be displayed on screen. On serif versus sans serif fonts, earlier research done by Tinker, (1932), Zachrisson, (1965), Poulton, (1965), and Moriarty and Scheiner, (1984) has proven that there is no difference between legibility of serif and sans serif fonts. These findings are also supported by research done by De Lange et al., (1993), and Bernard et al., (2001). However, some researchers claim the superiority of serif typefaces, as proven by research done by Schultz, (1997) and Wheeldon, (1996).

A legible text in web pages does not just make the web page easily readable, but also increases usability. A less legible webpage can lead to fatigue and tires the eyes quickly, decreasing user focus on reading the text resulting from extra challenges to recognising the text.
More recent Video Display Terminals (VDTs) implement up to date technologies that are able to produce sharper images, resulting from high amount pixels available per square inch. This could provide additional flexibility about choosing the fonts and colour combinations for texts and backgrounds. More recent research done by Adipat et al., (2011), Buchner et al., (2009), Chang et al., (2012), Hasan et al., (2011) and a few more researchers on legibility, has been found to be less focused on VDT resolution. This factor combines with earlier research results, used as a basis for constructing a well establish guideline has made it significant to investigate VDT resolution that has been proven to improve the quality of image displayed but yet to be prove able to increase the legibility of text in web pages.

Choosing the right colour combinations for text and the background is very important. It can influence users to stay or stick to the web page. Proven by research done by Kulkarni et al., (2011), her research reveals that, web colour application, influence website trust, and satisfaction. Chang et al., (2012) later demonstrated that chromaticity had a little effect on legibility speed, but that the subjective preference for chromaticity is more important than luminance. However, Hasan et al., (2011) proved that colour combinations for text and background do significantly affect the eye blink rate. This shows that an incorrect colour combination can affect legibility level and also expose the users to various eye problems.

Colour contrast, or the difference between the two colours used for text and background, may also affect the legibility level. A study done by Lee and SUK, (2011) showed that users are a lot more comfortable reading text with 60% grey as the text colour averse to a white background. Wang and Chen, (2003) also demonstrated that the difference between the two colours does considerably influence legibility.

Humar et al., (2008), and Buchner et al., (2009) in their research concluded that polarity of a text and the background colour also influence legibility. Polarity here refers to whether text or background has the higher luminance (which colour is brighter). Buchner et al., (2009) found out that only on a display that is capable of displaying a high luminance level does positive colour polarity have an advantage.