

**ASSIGNMENT COVER SHEET**

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**Course: Computing in information technology**

**Year: 1 of 1**

**Lecturer: Luke Raeside**

**Title of Assignment: Summary of a research paper**

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The material contained in this assignment is the author’s original work, except where work quoted is duly acknowledged in the text. No aspect of this assignment has been previously submitted for assessment in any other unit or course.

Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_/\_\_\_\_\_\_/\_\_\_\_\_\_

## Title of research paper summarised

Improving website design

### Who did what?

Melody Y.Ivory and Marti A.Hearst University of California, Berkeley 2002 investigated what makes a good design to a website, and developed a model to help users implement these changes that would make the website more pleasing to the eye and in terms of usability.

### Summary

Two students undertook a paper to investigate current methods of website design, their effect on productivity and how it can be improved though better website design principles. They undertook this as part of the Web Tango project. They aimed to help steer the average web site builder away from poor design principles and toward an automated quality checking tool and a grammar checking tool. They made these tools available online at “webtango.berkeley.edu”.

Melody Y.Ivory and Marti A.Hearst (2002) found that a website is a complex mix of text, links, elements and formatting, surmising that all these aspects affect a websites quality and usability. They came to the conclusion that these principles are important in thinking about website design to begin with.

The students came up with a table that created a way of calculating how many measures for each element on a web page were needed in order to come up with a design that is pleasing and easy to use. For example, they came to the conclusion that there are 31 separate measures that are important to think about in regards a text element including amount, size and complexity. The table also related to site architecture and the performance of the page, all elements discussed had a set of measures that were important to that particular element to optimize design.157 Measures in total were found.

Melody Y.Ivory and Marti A.Hearst (2002) then ran their crawler tool and used this to gather sample web pages. Initially it ran on the home page of a website and randomly selected pages at successive levels starting at that page and only selected informational pages ignoring advertisements or flash pages totally. The analysis tool then runs on these pages and retrieves the information on each element in conjunction with a site metrics computation tool, forming the table they discussed with the elements and their measures.

The students found there were three main principles to successfully designing a webpage; navigation design, graphic design and experience design. From these 3 main principles a hierarchical pyramid model was built, surmising that on the top level is the site architecture, while on the bottom are the actual site elements themselves. Web design literature and user studies were used to come up with the final model. A tool was then developed from this model that could compute 157 site level measures. The accuracy of this tool was tested on many websites and it was found to be 86% accurate on 154 measures.

The students performed three studies to try to predict page and site ratings. From these 3 they developed a simple prediction model. They called it the WebTango model. Firstly they drew up an analysis of 428 web pages and found expert reviews and ratings on these pages from PC Magazine’s top 100 sites. They called sites either rated or un-rated and set out to find a way to predict which category a sample site would fall under. They then computed 12 quantative measures related to page composition and design among other factors. They tried to see if they could predict with their model the page standings on this top 100. They found that 6 features were most important to design. The most prevalent were text cluster, reading complexity, and colour count and page size. They found that in rated sites these features needed to be tweaked a certain way to make the site very usable and stay in the rated group.

A second study was conducted and asked 6 website design experts to examine 1898 pages from the Webby awards winner’s websites. These pages were judged on certain criteria including content, structure, navigation and visual aesthetics. They broke these pages into three groups, “good”, “not good” and “poor”. They wanted to see if their model, using the measures they had created, could predict which group a site would fall into. Predictive accuracy was 67%.

The third and final study was to analyse over 5000 pages from 300 sites. They used all 157 measures from their model and again had 3 groups, “good”, “average” and “poor”. They used the model to try predict which group the web pages would fall under. It was proven to be accurate on a page level 96% of the time, and accurate on a site level over 60% of the time.

Melody Y.Ivory and Marti A.Hearst (2002) talked about their final task of applying the model they had built to website design. They took a sample of 15 web pages and made minor tweaks to these based off their model parameters. They asked 13 people to analyse the pages both before and after the adjustments had been applied to them using the model. They made findings that 10 out of 13 people preferred the web pages after they had used to model to make adjustments to it.

The students then analysed their final tool, the WebTango system. They analysed how the tool worked and how it can be applied to a website. The tool compared all 157 site level measures from the website, and then makes suggestions on how to improve the website and also gives links to example websites who are similar in type but have been designed to a higher level.

The major findings were in essence that a model can be developed by 2 students with little or no web design experience that can enhance the usability and visual aspects of a website very quickly by identifying areas that can be improved. It found that although some studies have found automated tools find it difficult to find problems with usability issues, the tool developed is considered a practical and useful solution to solve design issues early in the design phase of a websites development.