Webpage Development of Group Buying Websites Focusing on Web Usability and Interface Design

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Abstract

The purpose of the study is to determine how web usability and interface design on webpage development can affect the purchasing decision of consumers of group buying websites. With the rise of e-commerce, entrepreneurs nowadays cannot assume that when they build a website, customers will automatically visit them. Industry analysis shows how companies can earn decreased potential sales and low gains on return of investment (ROI) due to poor usability and errant designs. The researchers aimed to conduct an assessment on the current performance of websites in online group buying, identify significant factors that will affect the decision of webpage designs, create an ideal generic webpage layout for group buying websites, and evaluate the formulated webpage layout based on the assessment of current group buying websites. The methodology includes distribution of survey questionnaire and usability test among respondents. ANOVA and t-test were used as the statistical treatment of data. The study was able to verify through the comparison of usability tests that the proposed website showed significant improvements to improve the webpage in terms of web usability and interface design. The findings will be useful to entrepreneurs, online shoppers and future researchers for an improved e-commerce experience.

Keywords
Web usability, Interface design, Webpage development, Group buying website

1. Introduction

The internet has advanced into a true economy and a new frontier of business since 1977. The e-commerce industry became a hot market in the recent years that spurred a number of entrepreneurs to create businesses online (Nah and Davis, 2002). However, there is a hyperbole associated with the Internet and the Web that resulted in a mindset that e-commerce was an easy road to success (Pather, 2006). With the growing competition for online customers, companies cannot expect that when they build a website, customers will automatically visit them (Kim, 2013 Due to the growing competition for online customers, companies cannot expect that when they build a website, customers will automatically visit them. Web shoppers come to be more sophisticated, their knowledge of online purchasing alternatives makes them less patient on websites that are difficult to understand and use. More so today, where it is about giving the customers what they want, when they want it and how they want it, or they will go somewhere else.

This arises to the importance of usability and design of websites. Web usability is defined as the ability to find one's way around the Web, to locate the desired information, to know what the next thing to do, and very importantly, to do so with minimal effort (Nah and Davis, 2002). This is also referred to as the cognitive costs that a user has to bear because of the efforts made to search, interpret and process information while navigating websites (Suchman, 1987). Web usability depends on the webpage itself since it is the only connection with the user; it is what they visit and where navigation takes place. Not only web usability but also the interface design, the facade or layout of the website is also the first impression of the browsers (Tang, 2011). Especially to those businesses that have their webpage as their sole storefront, it will be their only means of connecting with consumers. Poor website design can be a major factor that negatively influences the purchasing intentions of consumers that affect the businesses' profitability. Online firms can be losing a large percentage of potential sales simply because their website is confusing and difficult to use (Lais, 2002; Nielsen, 2001). Previous studies have indicated that design decisions made in Web Pages influence consumer perceptions and their intentions to shop at those sites. (Lavie and Tractinsky, 1999; Zhang and von Dran, 2000) The aesthetics serve as a significant factor that affects pleasure and satisfaction of visitors to the website. In

addition, aesthetics can contribute to the success of an e-commerce website that leads to desirable user behaviours, such as more time spent browsing, more varied products explored, a higher response to promotional incentives, and enhanced probability of purchasing (Menon and Kahn, 2002; Tai and Fung, 1997). The importance of webpage layout is applicable to all Business to Consumer (B2C) e-commerce including group buying websites. Industry analysis showed that - e-commerce companies are earning low gains on return on investment (ROI) due to poor usability and errant designs of their Web-based stores. Considering the issues on Human-Computer Interaction, there are three major issues to consider and two of them are as follows: Web Usability and Interface Design, issues that cause problems on purchasing decisions. With different e-commerce industries, the focus was on group-buying websites. This is still on the promising stage in the Philippines. With an estimated compound annual growth rate of 67.74%, it has displayed signs of big potentials in the future (Business Insider, 2011). However, the performance of these websites based on usability test resulted only to 66.29% and considered as average.

2. Methodology

In the first phase of this study, initial research was done to come up with a survey questionnaire and a usability test answer sheet. Factors identified from previous researches were incorporated in the questionnaires; including factors in the area of cognitive ergonomics. The study considered the different stages in purchasing decisions that greatly affect the navigation of the user and these are: i) searching for products, ii) managing search criteria, iii) comparing products, and iv) completing purchasing requirements.

The researchers conducted 106 surveys to identify the factors that users consider important in a Webpage. Interval data were used as a level of measurement in the survey questionnaires and as a reference point, the consumers were asked which group buying sites they have tried. Their answers assigned their categories and identified which qualities or preferences they may have for each website. Distribution of questionnaires was done both online and in person. After gathering the data, interpretation followed. Statistical treatment of data was used to evaluate which factors are significant to all categories.

With the same respondents, an experiment was conducted to assess the current performance of the 5 group buying websites considered in the study and compare it with the ideal proposed website to be formulated. The respondents were asked to navigate the website that they have been using and navigate it as if they are completing a purchase. While navigating, they were asked to answer a usability test, a modified test from Nielsen's Usability Heuristics and Shneiderman's 8 Golden Rules, which is in the form of heuristic evaluation. The researchers were able to assess each website by checking its actual features and trying the actual customer experience in order to verify the respondents' response. The output of which are the significant factors and findings relevant in webpage development as well as the strengths and weaknesses identified all throughout the assessment. Further analysis was made by incorporating statistical treatment to data such as one-way ANOVA.

After gathering the survey results and assessing the current performance of group buying website, the actual formulation of the proposed webpage followed. The researchers translated the preferences of the consumers to the specifications of the webpage layout using House of Quality (HOQ) or the quality function deployment. The proposed website was applicable to both mobile and computer set-up.

The proposed website was shown to the same 106 respondents to determine if there were significant improvements. All of them performed the same experiment from the assessment of current group buying websites. T-test for paired observations was carried out to verify determine significance of the improvement made.

3. Results and Discussion

The study showed that in online group buying, 73% of the users does not navigate their website continuously and majority, 97% of which believed that there are certain stages in purchasing decisions that enables them whether or not to continue the deal. Also, it shows that among these stages, completing purchasing requirements is the most critical stage.

The operational proposed website is discussed below.

Starting with the homepage.
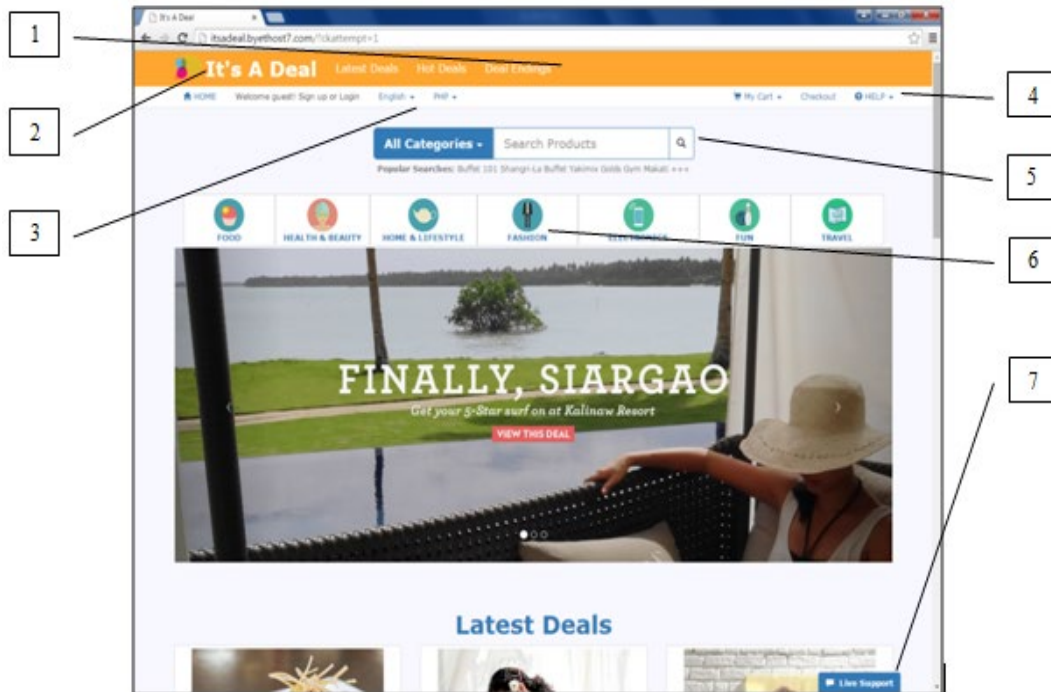
1. White background reduces the complexity perceived by. In addition, the color scheme – blue and orange increases the retention of product memory and induces a positive vibe to attract browsers.
2. Important information is placed on top
3. To match the system with reality, language and currency preferences are enabled.
4. Providing help options with increased responsiveness. Available help options are listing of Frequently Asked Questions (FAQs) and presenting of contact details.
5. Visible and accessible search bar that is available all throughout the pages of the website.
6. Coupon categories with icons and sub-categories provided when each icon is chosen.
7. A live chat support providing a responsive help.
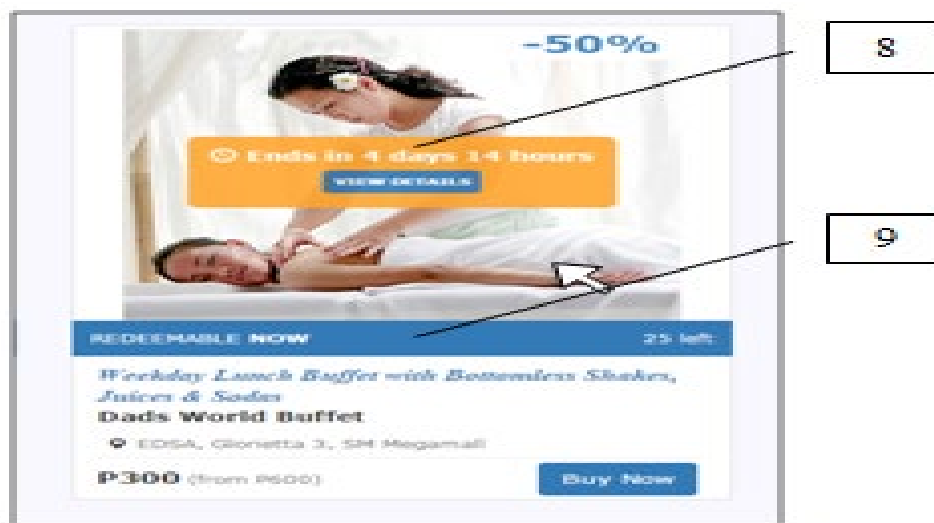
8. the mouse to a deal box in the homepage will show the availability of the deal and the percentage discounted, the common information needed in a group buying deal.
9. Significant specifications are shown.

As a deal is clicked, the page below follows.
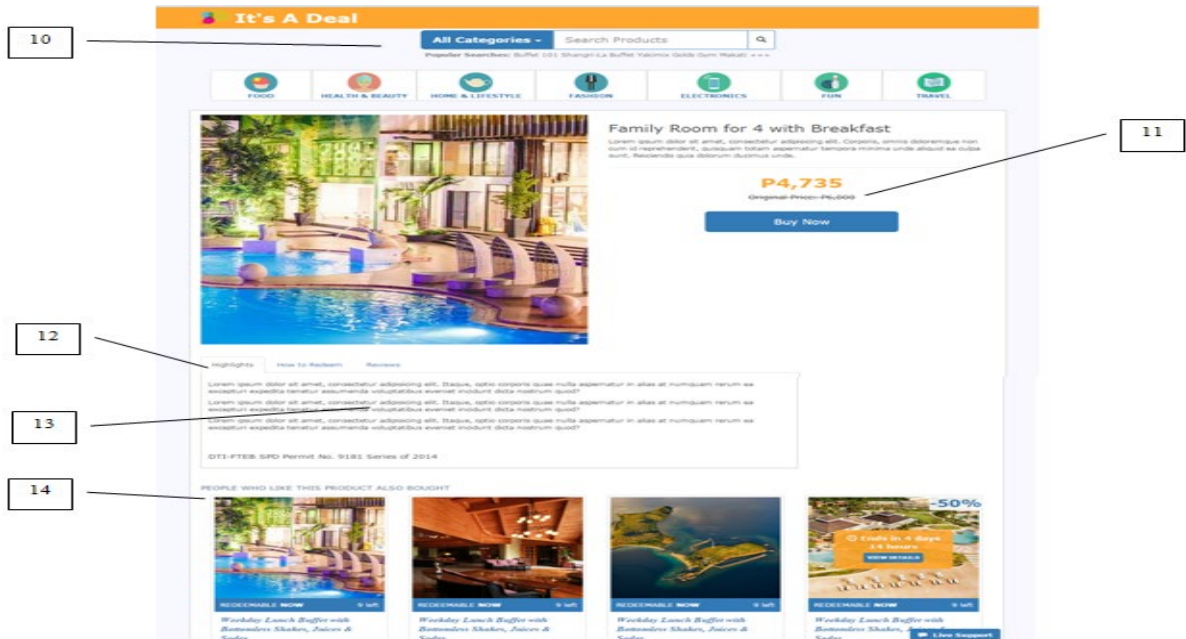
10. Retained heading for unexpected searches or navigation, giving the user control and freedom to browse the website whenever they choose to change inquiries.
11. Over-sized elements on the usual localities, with the "call to action" buttons placed on the right side for easy purchase proceedings.
12. Deal specifications are organized then categorized into three – highlights, how to redeem, reviews that shows concise and clear information.
13. One font was used all throughout the website to lessen complexity, with appropriate line spacing and sizes that depend on the significance of the text.
14. Comparison and further search of products is implemented by showing related searches below the selected deal.

Proceeding to the purchasing process, the page below follows.
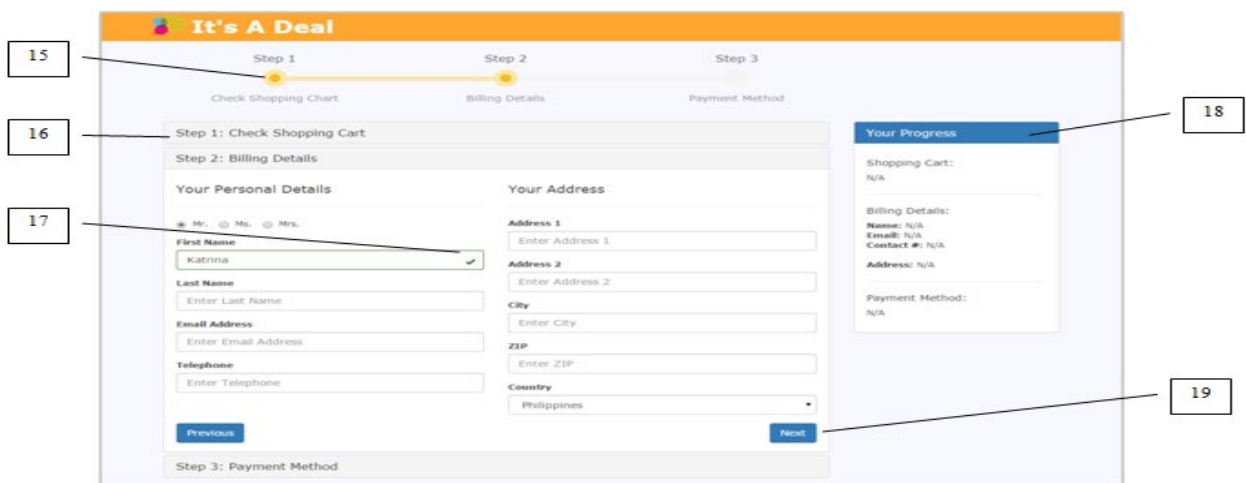
15. Progress bar that updates the user on their movement in the purchasing process. It shows the user what to expect and the steps they will undergo.

16. Clear instructions are given per step and only required information is included.
17. Error management that shows immediate status signals, disabling the user to proceed with the next fill-up box without placing the correct input
18. Right pane records the information provided by the user.
19. Navigation controls or multi-level redo/undo are provided.
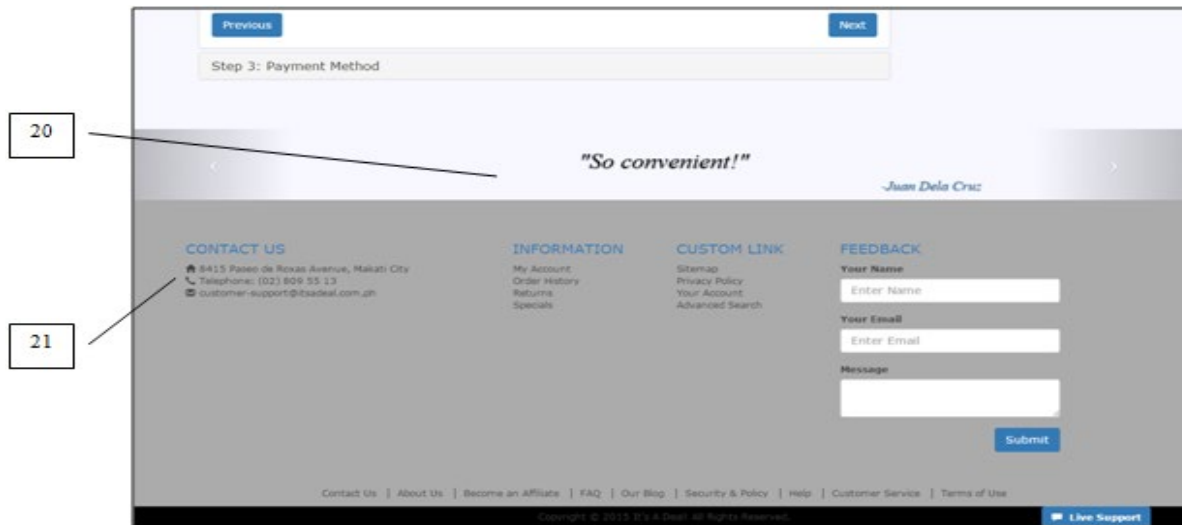
20. At the end of every page, the feedback or testimonials of customers on the company are flashed. It will prevent the user from exiting the website and searching for reviews or feedbacks regarding the website to prove their credibility.
21. The footer comprises of the common information that should be posted.

The proposed website resulted to a website rated as "superior". 22 out of 36 factors or 61% of the total count of factors have shown improvements. All other factors without significant improvements shows that the operational group buying websites already possess the ideal features for the website or depending on the variation of the user's subjective rating, also for all those other factors still shows that the hypothetical website has a higher rating than that of the existing ones, when averages are considered.

4. Conclusion

In this study, the researchers found that the proposed website formulated in the study proved how web usability and interface design can affect the purchasing decisions of potential customers in group buying websites. It showed how different factors related to human computer interaction can be improved through webpage development which will lead to decreased purchasing problems. Also, it was discovered how uncertainty and ambiguity in navigating a website can significantly affect the purchasing decisions of customers, and eliminating them will be essential.

Included in this study are suggested guidelines and propositions that can improve the current group buying websites, as well as a hypothetical website that will serve as the ultimate guide to be followed.

The researchers were able to come up with different recommendations that could improve or widen the study. First, future researchers can venture on the third factor of HCI issues which is trust. It is the key reason of potential consumer's lack of willingness to provide information and without necessary information, there would be no sale. Studies on webpage development focusing on the issues of trust between businesses and consumers are suggested. Second, the methodology of the study can be further improved by using laboratory experiments such as A/B tracking tests and using programs with heat mapping tools. Other usability testing methods can also be implemented such as focused group evaluations and using severity rating measures, and incorporating timed and defines task to be done in usability tests. As well as the development of the website to mobile view. Third, the study was only limited to the four stages of purchase decisions with an assumption that the potential consumers have already made up their mind that they are expecting to make a purchase, the factors of re-visitation of websites is not yet included. External factors in

the study can also be incorporated to have a better grasp of the experience of the browsers. Lastly, the study only focused on the group buying websites in the Philippines, other types of websites can also be used to verify and compare the results of the study. Additional respondents can also be applied to validate the accuracy of results, such as first time users of the said websites.

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