User Interface Design in E-commerce Website

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Abstract: In today’s era, the internet technologies have become more advanced and sophisticated so much so that most of the people cannot imagine and are not able to insert in their mind. As most of us agreeing that 21st century is the century of internet technologies and we are too much depending on internet technology that we are not able to stay a day without it, which clearly visibly demonstrate that every human activity is more or less connected with some kind of internet technologies. The technology is entertained by all of us, but we do not feel or envision how much it affects in our daily life. As human computer interaction increase, the websites are becoming more advanced and competitive. HCI and IS firmly focus on cognitive aspects which primary focus has been about how to upgrade users work effective and productive with computer. Many reative researchers have been providing veracious evidences that human activity is driven by emotional and affective factors. The emotion can affect people’s judgment and influence. It will conquer a user’s evaluation at immediate glance and influence the decision making while surfing on the websites. User’s perspective should be considered as an inexorable clue while designing a good web site. We are in the world of e-commerce and it is integrated part of our live. The e-commerce is contributing huge challenges to the vendors and vendors have to carry out the aggressive of online. The competition in e-commerce is increasing every day and costumers focus every corner of website, like design features and many factors that will make huge different. It is necessary focus not only on website design features perspective but very much on user perspective. This research work discusses the important relationship between emotional design of websites and users. It has an effort to understand both design features and user experience from enhanced design feature.

Keywords: interaction design, information design, interface design.

1. INTRODUCTION

User interface design concentrates on what clients may need to do what users might need to do and ensuring that the interface has components that are easy to access, understand, and being able to use those actions. User interface design unites concepts from interaction design, visual design, and information architecture. User Interface is the representation of the product or business to the client. Good user interface design improves the communication with the user because user interface communicates with the user, on behalf of the system. Every detail in designing a user interface is very essential creates an impact on the website or the system. For designing a good user interface design, it is very necessary of the involvement of the intended user. Any website is always expected to have a good user interface design otherwise the impression of the use or the errors bring down the user’s interest, so that the user is not frustrated by doing the task repeatedly. The information provided must not be too much or too little to the users it should be appropriate or enough information conveyed [5, 6]. Web has turned into a fundamental piece of life. It has advanced into a genuine economy and business. It has also changed life and the way business is being directed too. Since e-commerce business is the current trend, most of them have changed to online e-commerce business. Not all ecommerce business can succeed, since there are so many competitors and since it is a virtual platform in ecommerce business it is hard to say whether the users are having a good user experience or not. At their first use if the users are satisfied because first impression of the website matters, because 80 percent of the users will come back. They will go away from the page if they difficulty in finding their goals like finding the goods. Poor ecommerce website plan will bring about misfortune in profitability and income. Having a guideline for a website will be more beneficial. Users fail to purchase goods from an ecommerce site, about most of the time. People face various problems most of the time and it can be because of poor design or they can face some psycological problems in new technology.

Customers need items that can amaze them and touch their hearts. It is very crucial to draw their attention to website as quickly as possible, and this is only possible if a good user interface is designed according to the user’s need and their psychology, because they always use the website which is attractive, easier to use and trustworthy. Although internet technologies. Online users still experience the ill effects of comparable site ease of use issues.
It completely comprehends the procedure of website-client collaboration in general. Executing improperly without completely understanding the clients can drive individuals from the websites (Nielsen & Loranger). Subsequently it is important to altogether comprehend the procedure of site client cooperation in general. This incorporates why particular outline elements are chosen and introduced on a site, and how these elements are seen by clients. Such examination requires contemplations of both the website designer and user. Website outline components are properties of a site, for example, shape, shading and capacities that clients cooperate with, either deliberately or unwittingly. This includes why specific design features are selected and presented on a website, and how these features are perceived by customers. Website design features are attributes of a website such as shape, color and functions that customers interact with, either consciously or unconsciously. Several studies in IS and HCI provide evidence for the influence of these design features on customer perception and responses. In any case, design features should be deciphered by clients in ways that were proposed by website designers. It is essential to understand how the users actually perceive the website from their point of view and then the website should be designed in a way that users are satisfied in using it.

This requires an examination website and users communication from the point of view of users, this way the website created will help build the business income and marketing of the products and brand management. Setting up online trust is a test confronted by online sellers, particularly by those with recently settled web-sites or by merchants who do not enjoy brand reputation. These types of vendors constitute the vast majority of online vendors. It must be noted that with unfamiliar vendors, the website is the primary means of establishing first impressions. Therefore, the design features in the website play a large role in establishing trust.

1.1 User Interface design principles

There are a few standards which when taken after will make a designer a decent User Interface designer. The User Interface should look natural to the client that it should to be founded on the utilization terms instead of PC ideas like folders, documents which can be replaced by file; identifiers etc. consistency and it should be taken after when commands and menus are taken into consideration. They should be similar in arrangement and punctuation. There should not be any confusion to the client when utilizing or operating command and he should also have the capacity to anticipate the operation and results of commands. Clients ought to have the alternatives of recoverability to permit them to overcome their mistakes. These incorporate things like undo and redo facility. The interface projects ought to be furnished with manuals to guide client and client assorted qualities ought to be seen to make the interface to support diverse clients.

1.2 Usable Design

An effective usable design includes three different designs that are important for each aspect:
They are
- Interaction design
- Information design
- Interface design

To accomplish an impeccable design all the three designing characteristic ought to be incorporated and covered. If any one of these design fail then the whole design tends to fail. A website with good interface design and good information will not be successful unless there is a good interaction with the users.

![Figure 1.0 Usable Design](image)

### 1.2.1 Interface Design

An interface design has to be composed with appropriate colors and objects. Objects like buttons, menus and icons should be utilized. Colors should be utilized prohibitively with a meaning. Color pairing should be observed properly. Most essential is the navigation, which should be made easy. Style of proper interaction should be followed with proper symbols and language. Hence this would lead to a better interface design and it can be used easily.

Some of the rules to be followed in creating an effective design

<table>
<thead>
<tr>
<th>Rule</th>
<th>Strive for consistency</th>
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<tbody>
<tr>
<td>Rule 2</td>
<td>Enable frequent users to use shortcuts.</td>
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</tbody>
</table>
Rule 3 | Offer Feedback information  
Rule 4 | Design dialogue to yield closure  
Rule 5 | Offer simple error handling  
Rule 6 | Action – reversal undo  
Rule 7 | Design in such a way that the user can control the software  
Rule 8 | Minimize information, rules and instructions so that it is easy for users to remember.

<table>
<thead>
<tr>
<th>Table 1.0: Rules to be followed in making a website design</th>
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Rule 1 in Table 1.0 Predictable arrangements of actions ought to be required in similar circumstances; terminology should be utilized in prompts, menus, and help screens; and consistent commands should be utilized all through.

Rule 2 in Table 1.0 as the frequency of utilization expands, so do the client's desires to diminish the quantity of interactions and to build the pace of interaction. Abbreviations function keys, hidden commands, and macro facilities are very helpful to an expert user.

Rule 3 in table 1.0 for every operator action, there should be some system feedback. For frequent and minor actions, the response can be modest, while for infrequent and major actions, the response should be more substantial.

Rule 4 in table 1.0 Sequences of actions should be organized into groups with a beginning, middle, and end. The informative feedback at the completion of a group of actions gives the operators the satisfaction of accomplishment, a sense of relief, the signal to drop contingency plans and options from their minds, and an indication that the way is clear to prepare for the next group of actions.

Rule 5 in table 1.0 As much as possible, the website should be designed in such a way so that the user cannot make any errors.

Rule 6 in table 1.0 his feature eases uneasiness, since the client realizes that blunders can be fixed; it thus encourages exploration of unfamiliar options. The units of reversibility might be a single action, a data entry, or an entire group of actions.

Rule 7 in table 1.0 it should be designed in such a way that the users should be able to control and use it.

Rule 8 in table 1.0 Limited information and rules should be written.

1.2.2 Information Design

Present the data appropriately so that the user thinks that it’s simple in the matter of who is the proposed recipient, content, graphical article, adaption of data, photographs, and charts. Display the data legitimately so that the client thinks that its simple with reference to who is The proposed beneficiary, adjustment of data, text, graphical articles, photographs, objects.

The design ought to have the capacity to foresee what the client is doing and give messages pertinent to the circumstance, experienced clients dislike long messages and new clients won't not have the capacity to get enough information from short sentences so both sorts of users ought to be taken into thought and permit them to utilize message compactness. Utilization of colors should be in a legitimate way when demonstrating the adjustment in the framework status and shading coding can be utilized to tell the users about the task they are performing. Colors should to be utilized prohibitively with regards to dim colors and they should be utilized as a part of a thoughtful and innovative way. Good color pairing should be observant.

Messages should be given out in way that distinctive classes of users should have the capacity to handle it relying upon their abilities. When a message is give out it should be given on positive note not on funny note. The designers should give out the message in such a way that the country culture also should be followed.

1.2.3 Interaction Design

At the point when outlining an interface framework things to be thought about are the age, culture and foundation of the user, the user’s PC information should be surveyed furthermore his capacity to adjust to the system. If any doubts or queries, help should be provided. Navigating, searching and finding should be easy for the users so if there is any technical problem, it can be resolved by interacting.

2. REMAINING CONTENTS

2.1 Tools Used- weka tool

This research model was verified using the Weka tool: data analysis and predictive modeling
techniques. In this research we mainly used Weka tool to analysis my survey data which is very standard data analyzer tool. This software program used to conduct the data analysis and predictive modeling. The data should execute and save in Microsoft Excel in csv (comma separated values) .Weka tool is the bench that holds a gathering of picturing tool and algorithm for statistics analysis, “predictive modeling” and “graphical user interface” for ease approach to these techniques and purposes.

2.2 Sources and collection of Data

A study was conducted wherein the questionnaire was made and it was categorized technically and in the view point of technical and business sense. The questionnaire had answers wherein the students had to tick for what their opinion was on which ecommerce website they used according to their trust and matter of interest and also which website they find it easier according to their perception of use as the data matters in implementation of this research and to find out what the main criteria is and where does the user interface design in ecommerce website depends so that it becomes easier of the designers to concentrate on that. To perform the manipulation checks on the website treatments, and hence to identify the possible problems people are facing. In this study, an aggregate of 400 polls was composed, introduced and regulated to respondents, coordinate individual meeting was done to supplement the questionnaire method.

2.3 Research design

The questions were carefully selected and examined to feel the pulse of the client, for the people who use the ecommerce website. The questions were also focused technically. To find out if there are such things if people are facing. In other to avoid complexities and guarantee thoroughness quality in this research work, we chose to design the questionnaire survey and investigate and analyze by the kind of website they use and why relationship. E-Commerce stages, by gathering information along these lines, we could have a clearer view of sort of transactions that were made and which platform was utilized to make these transactions by which gender and age group as we could explore effectively through the data also, cross arrange among different issues and difficulties with respect to advantages/troubles, trust/safety, furthermore basically how E-Commerce has been able to influence the level of business transactions among the respondent in a developing market. It mainly focused on the design user interface of ecommerce website which attracts people.

2.4 Sampling techniques & sample size determination

For this purpose of the research study, data was analyzed using weka tool. Certain descriptive analysis and simple relative percentages were used to for finding answers. The standard representing the sample size is to pick such example which would logically represent the larger population as we attempted to get as much diverse response as could we could. Our fundamental target we individuals basically utilizing E-Commerce platforms at that specific time.

2.5 Validity and Reliability

Under this area, the state of validity and reliability of the questionnaire is put to test. To a large extent, reliability and validity in this research work is at a high degree, this is on the grounds that, my partner and I were on ground at the specific location to personally administer the surveys and investigation was done a short time later .Reliability in this research is very high, despite the fact that we will ever now suggest further studies and research, this is because, E-Commerce is a rising pattern and will dependably be enhanced as the world Progresses technologically, to such an extent advance research on this perspective will also need to be updated as the time passes.

2.6 Administration of data collection & Instrument

This was an absolutely perfect place to direct our surveys as it experiences a large amount of human activity on a day to day basis because of the business exercises that is being transacted, henceforth as this would enable us to have a comprehensive perspective of the issues and difficulties connected with E-Commerce utilizing.

2.7 Research Methodology

Questions were set accordingly in the paper forms and it was distributed among the students, the questions had spaces for the respondentents to fill in the form of ticking. After all the data was collected it was and filled in the Microsoft excel sheet systematically and hence converted the file into csv format. Csv is comma separated values. It is a type of file format which is in the form of tabular data like spreadsheet or database. These type of files can be imported and exported easily from programs that can store data in tables such as Microsoft excel.
3.1 Objective of Research

In this thesis consisting of different parameters which are categories base on the website design and features in influence of user experiences. This deals with how web-site pictorial attractiveness and simplicity of usage influence on user perception of trust, practicality and objective to stay or usage in the perspective of unknown site. Then it also tells us how much site’s“visual order” and “complexity impacts” user primary aesthetical impresses to a web-site and how much the aesthetic impression outcome influence in appointment and intent to usage the web-site. The both “visual order and complexity” can impact the effect the user perception on trust and intent to user the inexperienced website. This explores how distinctive in the “centrality of visual aesthetics” impact user sensitivities of sites. This thesis is studied base on influences of website aesthetic design and features. The primary aim of this dissertation is to understand the influence of website design feature on user response from the perspective of both design feature as well as user. This thesis based on supanch pengate “essays on the influence of the website” is based academic context to evaluate the characters of web designing features in the site and customer interface.

3.2 Data Collection Method

This survey is taking place in the Jain University with students of 3000 graduate and post graduate. Out of which 500 students are taken part. The participants are both girls and boys who have experience and has already experienced of online shopping. The participations were voluntary. The usage of students for investigation in an online market putting is suitable, since they are studied as conceivable online consumers. In add-on, they gathered retorts from graduating students of commerce, art, and computer science, who remain more comparable to the populace. The records arranged contained many usable responses. The online perception of retailers depends on invention or products and service quality; it is after become familiar to mind of the consumers. In order to trust and intention to practice is depending on the several factors like easiness of use, complexity, visual appeal and centrality of aesthetic design. The experiment is conducted using similar website and same contents with difference in color intensity, varies level of image quality. We have given them familiar e-commerce websites so that they had experience of its features and facilities which make them effortlessness of figure out. We are provided familiar and well known websites as Amazon, Flipkart, Alibaba and Ebay. They had used four websites which are given to them and the person had given limited time and then allows him to response immediately. In order to avoid the manipulation of experiments, the person has to response very congested time so that he may not able to think much and produce the really answer. They have given familiar website and let them to create impression and trust to particular design features. Initial emotional response to the particular website, that influence by easiness of use and visual appeal which can decide the trustworthiness and impression.

The online vendor is bringing out trustworthiness driven by website features and facilities and also it is driven by the many factors from contents of the website. In this paper, we are primarily concerned on relationship between emotion design and users experience of a website. It is important to understand the fundamental requirement of customer and psychological experience of users. We should understand the reality of emotion of user and it is not valid to conclude a common needs and experience of emotion towards the website design. Different users have different emotion at different levels, at different time and environment. To build environment-based solutions to solve the problem require the understanding of user and their basic needs. To meet the prerequisite of users is to builds situation-based solution from perspective of the functionality, applicability, reliability, attractiveness, and capability. Emotion can bring enormous effect to the website from both physically and mentally or psychologically. The report shows that “visual appeal” yields a better inspiration on the user observations than easiness of usage. The results show that both “visual appeal and easiness of usage are adding considerations in emerging on-line confidence amongst male clients, with “visual appeal” overlooking confidence establishment amongst female clients. A research is steered to analysis the desire of the “visual design features” thru the website. The results suggest that user can evaluate, and the results disclose the consequence of “visual order” on client consideration on trust and devotion on design basics accessible on web-pages.

4. CONCLUSION

In this study, we directed an analysis to examine site outline includes that impact trust and examine their impacts on different types of user’s behavior within a familiar website, environment. The consequences of the this analysis experiment the suggestion that website trustworthiness is evoked by a website client’s initial emotions reactions after the client’s first experiences with website design.
and that the emotions reactions create carry over impacts on the client's behavior. Thus, online merchants' apparent dependability is driven by website features. Behavioral goal, thus, is formed by trust. If a software system is able to design a good set of UIs that are created under the golden principles of software quality, then it is likely that the software system will be widely appreciated and used by the intended audience. For accomplishing the high objectives of advance and successful correspondence of the website design's viewpoint, the UIs ought to be composed under close and ascertained supervision of the partners, and the end clients ought to be required during the time spent in the process of design.

5. REFERENCES

[1] Ping zang, Ruth v. small, Silvia barcellos, Websites that Satisfy Users: A Theoretical Framework for web user Interface design and evaluation, school of information of studies, Syracuse University.


[12] Ravi Chandra chaitanya guntupalli, User Interface Design – Methods and qualities of a good user interface design, university west.

[13] Nisha Chanana, Sangeeta Goele, Research Scholar, University School of Management, Kurukshetra University, Kurukshetra, Research Scholar, University School of Management, Kurukshetra University, FUTURE OF E-COMMERCE IN INDIA.


[15] Supavich Pengate, Essays on the influence of the website, emotional design features on users, Emotional and behavioral responses


[17] Ping Zhang, Syracuse University, Toward a positive design theory: principles for designing motivating Information and communication technology.

[18] Romina Rimondi, Department of General Psychology, Intercultural aspects of Web Design: Approaches to Culture-Centered Design.


[20] George W. Fitzmaurice, Graduate Department of Computer Science University of Toronto, Graspable user interfaces.

[22] Tien Feng Chang Institute of Communication Studies, National Chiao-Tung University, Can emotional design change people’s attitude on the web site?


[24] Jie Min, School of Software Nanchang University Nanchang, China, Emotional Design In the interface of Website for the aged.


[26] L.Guan ,Y. Wang and Y.Tiel I Ryerson Multimedia Research Laboratory, Ryerson University, Toronto, Canada, Toward Natural and efficient human computer interaction.


[28] Kyeong Kang and Lana Kovacevic, Faculty of Engineering and IT, University of Technology, Sydney, Australia, The Effect of Culture on Emotions and Trust of Website.
