

A Study on the effect of E-commerce Webpage Design from the Perspective of User Interface

Chuan-Chun Wu, Shu Hong Liu

Department of Information Management, I-Shou University, No.1, Syuecheng Rd., DashhuDistict, Kaohsiung
840,Taiwan

Corresponding Author: Chuan-Chun Wu

ABSTRACT: The purpose of this research is using a website as an example to discuss how webpage design impact the behaviour of users browsing. The significance of this research is to improve the technology of webpage design with the perspective of User Interface, to make users get what they want more easily and conveniently when browsing on the website. Qualitative Research was chosen to use in this research, information released from respondents were gathered with depth-interview after their browsing on the website. This research also mentioned that not only a friendly interface of website but a stylish design would impact their preference of browsing on the webpage; User would prefer trendy design webpage design and user-centred interface in all kinds of circumstances. As a website designer, should always put user at the first place and put their own personality and core value in it so that an excellent website can be developed. Also, a questionnaire developed for user to answer who has working experience either in webpage design or telecommunication industry. These data will be obtained and saved for further webpage-design reference after analysis.

KEY WORD: Webpage design, User Interface, E-commerce, Means-end chains

Date of Submission: 23-02-2019

Date of acceptance: 13-03-2019

I. INTRODUCTION

1.1 Research Background and Motivation

Because the economy on Internet grows so rapidly, E-commerce becomes a whole new choice for customer. And development of E-commerce has become the focus of Economic impetus in many countries. E-commerce has not only stimulated domestic market but indirectly promoted international trade. E-commerce represents a new path to change of the trading environment in business. Under the construction of business mechanism, the “website” plays an important role to offer a platform for consumers to purchase. People eventually accept its existence and the way it exists in our daily life. People who are browsing the website also to be the consumers so website should be created as user-friendly of designing it.

BCG evaluated that Internet economy in G20 countries would increase to 4.2 trillion (about 5.3% of G20 countries GDP) in 2016 from 2.3 trillion in 2010. Main contribution of Internet economy to GDP comes from the consumption on Internet such as amplification effect of E-commerce. Taiwan has obtained sound and perfect infrastructure construction of Internet foundation; the computer penetration rate reaches 86.5% along with 79.9% of broadband penetration rate per family. Also, Taiwan has performed excellently as ranked fifth globally on appraisal index of internet using in Global Information Technology Report 2013, WEF. Based on McKinsey & Company research, E-commerce developing in Taiwan is complete strong, it is expected to create more niche and value. The output value of E-commerce in Taiwan was expected to reach 1 trillion from report of Ministry of Economic Affairs in 2014.

Now E-commerce has become a necessary part of trade for store and enterprise. An interface that is supposed to be simple for user to operate and help user to find out the product they want, good data security and simple transaction process are also two important factors when people define what a good website is. And It is almost the most important that if the interface of website is easy and simple to operate. This research aims to build a user-centered system for user more easily to browse on the website, reduce the resistance, and create a great website-browsing experience.

1.2 Research Purpose

Webpage design in this research attributes one important element of E-commerce, this research hopes to reach the achievement that website will to be designed with technology of Human-Computer Interaction, which is user-centered theory. This research is expected to be the reference for future study in the relative field. The main purpose of this research is as followings:

- (1) To discuss the webpage design with the perspective of User Interface to improve the satisfaction of user to system.
- (2) The progress and accomplished results of this research is expected to be the reference for future study in the related field.

II. LITERATURE REVIEW

2.1 User Interface

According to International Organization for Standardization (ISO), Usability is the effectiveness, efficiency and satisfaction with which a specified set of users can achieve a specified set of tasks in a particular environment. It means a useful product should be able to help users finish their work and make them feel satisfied and fulfilled. Nielsen pointed "Ten design mistakes on User Interface" on his updated version in 2008. A bad programming is caused by designer who emphasizes too much on function and technology without considering the perspective of users. Some of them even think a good design is one that looks pretty. There are 8 guidelines for User Interface design (Shneiderman, 2004)

2.2 Human-Computer Interaction, HCI

Human-Computer Interaction, HCI means the communication and interaction between human being and computer (Huang, 2004).

Kroemer & Grandjean (1997) also stated that points of interchange either from human body to machine or the other way around are ultimately important for Ergonomics or Human factors.

A good Human-Computer Interaction should not make users feel anxious, worried, fear and unable to communicate with the system. Human-Computer Interaction is a design about well-functioned and smart computer system with safe, efficiency, easiness and joy (Komatsubara 1992).

2.3 Webpage visual design

There are many factors to define what a good webpage is, Webby Award is an award for excellence on the Internet presented annually by The International Academy of Digital Arts and Sciences, the purpose of it is to choose the best website worldwide, the evaluation criteria has six factors: content, structure and navigation, visual design, functionality, interactivity and overall experience. The good visual design is not only beautiful but also with high quality, suitability and responsive with the message from reader. Lavie & Tractinsky (2004) put forward "classical" and "expressive" two factors when it comes to evaluate webpage visual design. "classical" suffices the organized, clear, clean and symmetrical traditional aesthetics, and "expressive" emphasizes the originality, attractive design and special effects.

Heijden (2003) considers that a website with good visual attraction about layouts, color use and associative perception can help user notice the practicality and delight of the website. The more visual attraction a website has, the more pleasure a user will feel. The research shows that the user averagely spends only 15 seconds to browse a website, it's the visual design determines user will leave or stay on the website in those few seconds. The style, type and outer appearance of the webpage can attract user to browse, then it will be the color, picture, text, visual message, etc. motivate user to develop novel feelings to explore the webpage and make them compare with the previous websites they had browsed. So, we can find out a website with beauty on overall arrangement and color can trigger the joy and pleasure and strengthen the will of continuing using the website.

2.4 Webpage Arrangement

Webpage arrangement is the plan of graphic configuration, put words, picture, color, form, etc. into the limited space with precise proportion of combination to attract user. (Feng, 2000) in her research found out that both professional and amateur webpage designer agree that webpage arrangement is the most important one on webpage visual communication elements, followed by corporate image, picture, color, operability, word, and symbolic representation. Webpage arrangement combines every important visual factor on developing a webpage. Long things short, it's the art of arrangement combines practicality and beauty.

III. RESEARCH METHODS

3.1 Qualitative Research

In the conventional view of statisticians, qualitative methods produce information only on the cases studied, and any more general conclusions are considered propositions. Qualitative methods can be used to seek empirical support for such research hypotheses. So, qualitative research seems to be an ideal methodology to choose for this research, the aim of this research is to find out the relation between Human-Factor Engineering factors and webpage design, how webpage design and Human-Computer Interface impact user's behavior on choosing and browsing on website.

In contrast, a qualitative researcher holds that understanding of a situation or events comes from exploring the totality, often with access to large amounts of "hard data". It may begin as a grounded theory approach with the researcher having no previous understanding of the phenomenon; or the study may commence with propositions and proceed in a scientific way throughout the process (Taylor & Bogdan, 1984). Since E-commerce has been growing rapidly, it is important for both enterprise and individuals to build the website to promote them and introduce their product, maintain the customer relationship. Understanding the factors why and how the website can attract user is the purpose of this study. To avoid the error caused by the equipment, the device and application respondents are using will keep the same.

A popular method of qualitative research is the case study (Stake, 1995 or Yin, 1989) which examines in depth "purposive samples" to better understand a phenomenon (Racino, 1999); hence, smaller but focused on samples are more often used than large samples which may also be conducted by the same or related researchers or research centers (Braddock, et al., 1995). To help navigate the heterogeneous landscape of qualitative research, one can further think of qualitative inquiry in terms of 'means' and 'orientation' (Pernecky, 2016).

Experiment Design

The research design includes the use of qualitative research to develop questions for interviewers who have working experience of website designing or communication technology. Rossman and Rallis (1998) have stated that "there are few truths that constitute universal knowledge; rather, there are multiple perspectives about the world", so qualitative research is relatively more suitable for this research. To understand and explore the perspectives of interviewers about how website design and interface influence their preference of browsing the webpage, it is better to develop open questions in the questionnaire. Questions in the questionnaire will be answered vocally by respondents and the interview will be recorded after the agreement was given from them. The aim is to find out which kind of webpage design and devices they prefer to use and why they choose it.

3.2.1 Interviewing the participants

In-Depth Interview used in this research is one of ways often-used for qualitative research. It's a personally interactive way for construction and exchange of views through speaking conversation between interviewers and respondents, to find and analyze the motivation, belief, attitude, practice, etc. from the respondents. This kind of research is a social interaction process between interviewer and respondent, the access to information is the product of social interaction.

The principle of selecting respondents in this research includes is listed below :

- (1) Related working experience in the field such as webpage design or telecommunication. In-depth interview is used in this research, so it will be difficult for respondents to answer if they lack knowledge and working experience in the related field.
- (2) For interviewer to understand and judge the information released from respondents more correctly, it will be good if interviewer have background understanding to respondents, so co-workers or business partners are preferred on the interview.
- (3) The number of respondents will depend on the degree of saturation.

It has reached data saturation when interviewing the 12th respondents.

3.2.2 Conducting the interviews

Data from 12 professional respondents will be analyzed for this research, the personal information of respondents will be hidden for a capital security.

3.2.3 Principle to Interview

Semi-structured interview is used in this research, as mentioned before, interviewer proposes the outlines or points to have background understanding of respondents' background for getting better observation. And the interviewer should grasp some principles during the interview.

First, interviewer set respondents' mind at rest by guaranteeing all the information during the interview will be anonymously handled. Second, Simple and neutral terms should be preferred to prevent respondent from being influenced by subjective factor interviewer has, which means inductive way of questioning should be avoided. Third, interviewer should always keep respondents on the major theme to answer the question, not to be carried away. Fourth, the order of questions should be elastically adjusted based on the situation and answer of the respondent. Fifth, the content of questioning needs to focus on actual case the respondent has experienced, for understanding how they dealt with. Also, preventing respondent from overestimating their self-capacity and underestimating the ability of resource they have used. Sixth, to make respondent willing to provide in-depth answer, interviewer should encourage them speak more instead of interrupting them during the interview. Seventh, interviewer can ask respondent questions due to information given from them. Eighth, respondent is the main character during the interview; it is interviewer's responsibility to make them feel free instead of arguing and refuting them. Ninth, interviewer should set up a comfortable and relaxing environment

for respondent, therefore respondents’ office should be avoided. Tenth, full recording the interview is necessary, transcript will be written down after the interview is finished for further data analysis.

3.2.4 Interview Outline

The main questions in this research include :

- (1) How does webpage design impact the way user browses?
- (2) What is it you think a website can attract you?
- (3) What are the 3 most important specifications you think for a website?

Therefore, the interview outline will focus on these 3 topics, have in-depth inquiry to respondents based on the information offered from them. The interview outline will be divided to three main topics per the previous literature review

Table 1. Interview Outline

	Main Outline	Expected Information
Topic 1	Will design of the webpage become the reason make you want to browse on the website	Hope to gather the information from respondent’s own experience, find out their preference and the reason why they think so.
Topic 2	What is it you think a website can attract you	Hope to gather the information from respondent’s own experience, find out what’s on a website can attract them
Topic 3	What are the 3 most important specifications you think for a website?	Hope to understand the expectation of respondent about ideal website

3.3 Research Tool

Research tool as “Means-end chains” with tactic of laddering”, “Implication Matrix” and “Hierarchical Value Map” are used. This research used “Means-end chains” theory as foundation with tool of “laddering” when interview was processed. Then a ladder relationship was built and shown connections between factors as to be an “Implication Matrix”. And so “Hierarchical Value Map” was developed to explain the relation among 3 factors “attributes”, “consequence” and “value”. “Means-end chain” theory was firstly mentioned by Gutman 1980s based on “Expectance-Value Theory”. It is mainly used to analyze the relationship between products and users in market research.

The attributes of product or service is built on the cognition of customer, and the product purpose is to satisfy the customer’s need and enhance their desire. It’s also called hierarchical value map. To understand what customer needs and desires then customer value is possibly to create. (Woodruff, 1997). The whole concept of this research was processed in small group by interview that let respondent express their opinions deeply and comprehensively.

Table 2. Means-end Chains

ATTRIBUTE	CONSEQUENCE	VALUE
SPECIFIC, ABSTRACT	FUNCTIONAL, PSYCHOLOGIC	BENEFICIAL, ULTIMATE VALUE

IV. DATA ANALYSIS METHOD

The intentionality of user will be discovered deeply by the perspective of level. The structural relationship between user’s cognitive structure and potential value would be built.

4.1 Content Analysis

Content analysis is a narrative way to systematically and objectively deal with quantity. The data content would be categorized in objective and systematic steps. Messages of data is used as the foundation to discover related topic. But the reliability of analysis depends on coders’ own experiences and perspectives of coding rules, so consensus should be made in advance and results should be cross-compared after coding by other coders.

4.2 Implication Matrix

Implication Matrix is a method to quantify the qualitative data. The matrix made by in-depth interview links the relationship of 3 factors “attribute”, “consequence” and “value”. It clearly shows the numbers of connections and whole context among factors. In matrix, “number-size” represents the times of connection which also means how strong the relationship strength is. The relationship among factors would also be used in Hierarchical Value Map.

4.3 Hierarchical Value Map

Hierarchical Value Map is also called Perceptual Mapping. It is a hierarchical chart drawn by “attribute”, “consequence” and “value”. It also can be used to understand the value and consequence of product brought to the user by its attribute.

4.4 Interview Tactics and Respondents

To confirm the actual needs of the user and to understand the value of web-page design. The respondents to be collected for this research were professional sampling which those in this research either has the experience of web-design or working in the field of telecom industry. There are three steps in this research, questions for the first step are as listed below:

“Have you heard of emome? Have you ever browsed on there?”

“What is it you think a website can attract you?”

“Have you noticed that desktop and mobile version are 2 different websites?”, followed by gathering respondents’ personal information so first step is finished.

The second stage is for assignment, in here the respondents’ personal information would be reviewed at first, then followed by recalling the previous interview to arouse the respondents’ memories. Respondents were asked to browse on emome and Apple official website. Interview would be initiated immediately after the assignment finished. Respondents’ experience of browsing on the website would be recorded as content basis, so were the time spent and frequency of clicking on the mouse.

The third step would immediately start after operation of browsing on website finished, questions would be asked as 「How did you feel on overall experience?」, 「Which one’s interface you think is more user-centered? why?」, 「Which one’s layout you think is more helpful when you are trying to gather the information?」, 「If emome is going to revise its version, which 3 advices you would give to it? Why?」. The 「Attribute」, 「Consequence」 and 「Value」 about web-design would be discovered step by step in a comparison with control group. The respondents were encouraged subconsciously to have deep thinking until them no longer able to reply the question. The third stage is to classify, code and analyze the raw data of in-depth interview. The Hierarchical Value Map would be drawn by the implication matrix classified with the method of content analysis. 「Attribute」, 「Consequence」 and 「Value」 were analyzed by their connection and relationship in between.

4.5 Research Results

There are 24 elements classified based on the results of interview for this research, each element was inducted to the level they belong for building the whole architecture. The construction of category needs to follow three principles: appropriate, exhaustive and exclusive.

4.5.1 Analysis of Attribute, Consequence and Value

Attribute, Consequence and Value, these three levels were sequenced by the times mentioned from respondents. “Attribute” represents the function and effect respondents felt about after their browsing on emome. There are 8 factors about attributes classified from the results of interview. They are “friendly interface”, “stylish”, “rich content”, “focus”, “interactive”, “brand”, “Characteristics” and “connection speed”. In the level of “consequence”, respondents can directly gain substantial effect or psychological benefits through the factors of

“attributes”. There are 8 important factor about consequences which are “High feedback”, “deep impression”, “motivation”, “smooth exploration”, “easy to use”, “no pressure”, “emotional satisfaction” and “high efficiency”. At the stage of “Value”, respondents would obtain the demand satisfaction or value reaction. Those factors of values are listed in descending order by the times respondents mentioned that are as “Joy”, “Fulfilled”, “Trust”, “Fresh”, “Honorable”, “Satisfied”, “Accomplished” and “Identified”.

Table 3. Analysis of Times feedback

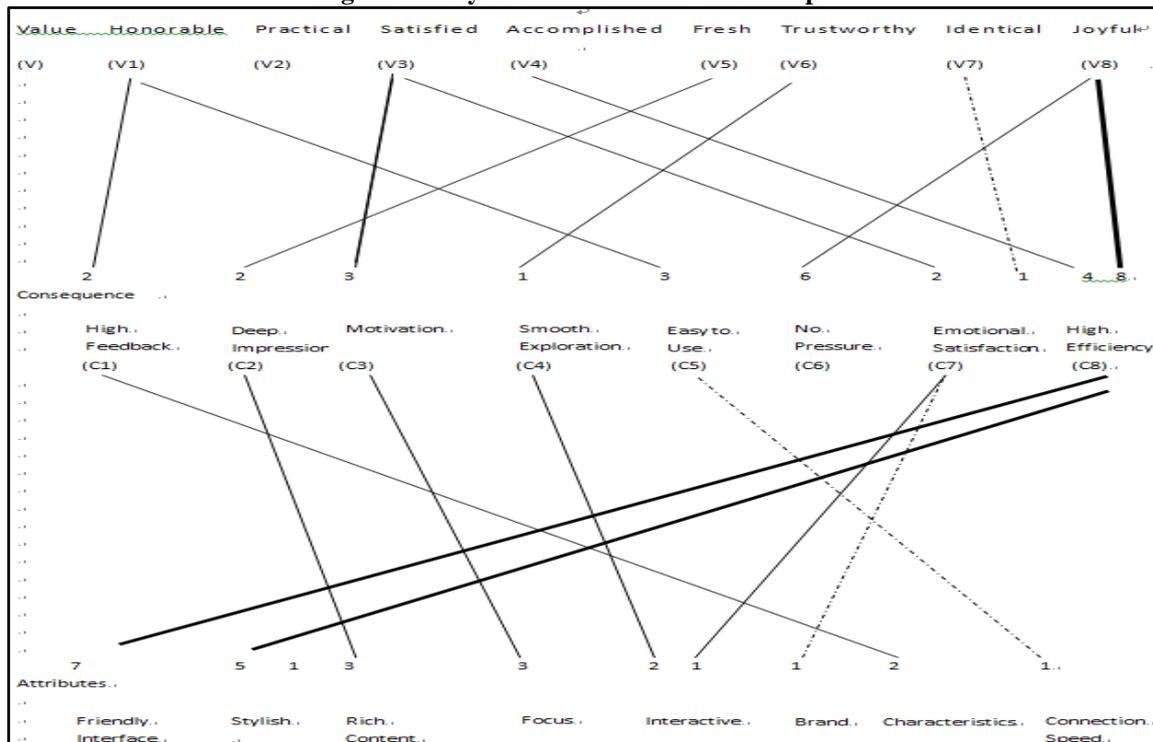
Category	Times	Attributes	Description
A1	8	Friendly Interface	1.Simple typography 2.Distinguished element 3.Good color deployment
A2	9	Stylish	1.Fashionable 2.igh quality of appearance
A3	7	Rich Content	1.Interactive pictures 2.Clear information
A4	7	Focus	1.Information 2.Enhancement 3.In order 4.aster-Slave relationship
A5	6	Interactive	1.Detailed 2.nimation guide 3.Good using experience
A6	5	Brand	1.Clear subject personality 2.Goal-oriented design 3.Modularization
A7	4	Characteristics	1.Prompt function 2.Stratification
A8	2	Connection Speed	1.Smooth 2.No interruption

4.5.2 Analysis of Hierarchical Map

The Hierarchical Map was drawn by the basis of results from attributes, consequence and value. Different respondent has its own unique connection between these three levels. The Hierarchical Map can be used to help understanding the consequence and respondents' inner value which is shown in the implication matrix. There are 12 people on sampling, so the cutoff value (5%) is 0.6. If the relation between 2 factors is direct, the cutoff value is 2. If the relation between 2 factors is indirect, the cutoff value is 1. It means the factors should be at least mentioned above 1 time to make sure its connectivity.

The dotted line represents that the factors has been mentioned but the hierarchical relationship doesn't reach the standard. The thickest line represents the main hierarchical relationship, the strongest connection and the value user appreciate the most. (Gengler & Reynolds, 1995)

Figure 1 Analysis of Hierarchical Value Map



1. Focus (A4) → Motivation (C3) Satisfied (V3)

Many respondents mentioned that there's a huge gap of fashionable design between emome and Apple. The home page of apple display their products in a very creative and focusing way with color. The way Apple does on their website not only efficiently reduce the time for query, but also attract users to keep them coming back. Let users feel that searching information for cell phone becomes a fulfilled mission instead of tiring job.

2. Interactive (A5) → Smooth Exploration (C4) Trustworthy (V6)

Respondents emphasized that Apple expand their “Query Information” service from commercial behavior to customer experience. The user-friendly interface not only usefully communicates with user by introducing product to customer in order, such as accessories feature, charity and newly arrivals. They put user experience at first place, unlike emome makes user feel frustrated and irritated about the information they obtain is useless or incomplete. The user-centered interface makes user easy to search and feel trustworthy.

3. Interactive (A5) → Emotional Satisfaction (C7) → Satisfied (V7)

Respondents said, the service Apple applied is like there’s a real assistant next to you, advised you “where to go” and “what to do”. The service that emome provided is much inferior compared to Apple. Also, those situational style pictures displayed on Apple make you feel as if you’d already been enjoying their product. Therefore, users can’t help but wanting to experience other products that also could satisfy them emotionally.

4. Characteristics(A7) → High Feedbacks(C1) → Honorable (V1)

The respondents mentioned that the interface of Apple smartly categorize the massive information by graphics. Different products have their own shape with their unique style and color. A useful icon always pop out when unrecognized operation appeared. Icon plays an important role in this browsing experience. It is more intuitional than words that can make user understand more quickly, like the picture “Magnifier represents “search”, and the bag represents the “shopping cart”. With these useful icons, the whole browsing experience makes as if there were a virtual assistant next to them so makes they feel beloved and respected.

5. Rich Content (A3) → Deep Impression (C2) → Fresh (V5)

The feeling “Fresh” comes from the rich and organized content, the well-designed color impressed the user a lot that triggers their curiosity to browse more. Many small details may not be noticeable but respondents specially pointed that those details made their eyes more comfortable when watching it compared to texts.

6. Friendly Interface(A1), Stylish(A2) → High Efficiency (C8) → Joyful (V8)

This is main connection route in Hierarchy Value Map, “Friendly Interface” was mentioned by 7 times out of 12. The homepage of Apple put high definition picture with attractive introduction. And by its material design, user can understand the product at a glance. The useful icons stuck at top helps user to eliminate unnecessary clicks back and forth. With the pleasure of saving time, user felt joyful all the time on browsing the website. “Joyful” was mentioned by 8 times represents how satisfied and good experience user feels about Apple which proves a good interface is extremely important.

By Hierarchy Value Map and feedback from respondents, what weaknesses that emome has and need to improve is listed below:

- (1) Bad-designed homepage with unorganized and messy information stuck on them can’t attract user at the first sight. Respondents said emome makes them have no intention come back to browse again.
- (2) emome offers no clear operation interface that makes user get lost easily in their website. User doesn’t know which step they are in now and what to do next so they feel frustrated and angry very often.
- (3) There is no immediate feedback to notify user when the error happened. User can only find out what’s going wrong at the end that makes them have no choice but restarting the whole procedure again.

V. CONCLUSION AND SUGGESTION

From the result of research, it is found that the most important value factor is “Friendly Interface” and “Stylish” that lead to “Efficiency” and result in “Joyful”. The factor “Stylish” gets user’s attention in the first place that makes them want to browse on the website. Followed by the factor “Efficiency”, for example, Apple categorize the complex products by graphics that reduce the time user spend on searching for the product. People now in the era of information-explosion, information is brought to people all the time either in physically or virtually.

No matter in which device, how to bring information to people in both clear and efficient way is the most important topic. The design on Apple maybe only suits for now, there will be another trend of interface in the future. The style of Apple website is for the demand of modern times, especially in today that conversion among different platforms or readability of messages are all very important parts of topic need to be considered. The flatness Apple creates on its architecture and vision suits perfectly the style of mobile device demands so Apple becomes a mainstream of interface. There is no question that there are a lot of parts emome can learn from that. In the development of design, user should always be put the first place to consider, try to fill in user’s shoes to dig what they care about or what they really like for understanding their terms of thinking. Not just focus on visual attraction and ignore the importance of function ability.

The trend of modern times gives many followers a target to imitate, the western society inherits the rich resource based on its culture and background. They also have many experience of study on the field of Human-Computer Interaction.

The Eastern countries always see them as a model to follow or imitate, but the surficial imitate can't get the core value, only understand its spirit behind the surface is the key to develop its own style. Nowadays many websites are designed by the same style: clean, neat and consistent, which is good. But there are doubts and criticizes appeared that "doesn't this kind of design also indirectly kill the creativity of designer?" The modulation of typesetting and color application indeed makes website look good but also makes them all look the same without designer's unique style and character in it.

Ideal of design from Apple is a trend and standard, not the end. As a website designer, should always put user at the first place and put their own personality and core value in it so that a good website can be developed.

BIBLIOGRAPHY

- [1]. Braddock, D.; Bachelder, L.; Hemp, R.; Fujiura, G. (1995). *The State of the States in Developmental Disabilities* (4th ed.). Washington, DC: American Association on Mental Retardation
- [2]. Feng, S.P. (2000). *A Study on Visual Communication User Interface for World Wide Web-Based on Taiwan the Web Page of Corporation as an example*, YunTech Department of Visual Communication Design, Master Thesis.
- [3]. Gengler, C. & Reynolds, T. J. (1995). Consumer understanding and advertising strategy: analysis and strategic translation of laddering data. *Journal of Advertising Research*, 35(4).
- [4]. Heijden, H. V. D. (2003) . Factors Influencing the Usage of Websites: The Case of a Generic Portal in the Netherlands. *Information & Management*, 39, 705-719.
- [5]. Huang, H.M. (2004). *A study of usability factors of web navigation design*. Chinese Culture University, Master Thesis.
- [6]. Kroemer, K. H. E. & Grandjean, E. (1997). *Fitting the Task to the Human: A Textbook of Occupational Ergonomics*. London, Taylor & Francis.
- [7]. Komatsubara, A. (1992). *Dialogue Cognitive Human Engineering Design*. Tokyo, Technology Hall.
- [8]. Lavie, T. and Tractinsky, N. (2004) . Assessing Dimensions of Perceived Visual Aesthetics of Web Sites. *International Journal of Human-Computer Studies*, 60, 269-298.
- [9]. Pernecky, T. (2016). *Epistemology and Metaphysics for Qualitative Research*. London, UK: SAGE Publication
- [10]. Racino, J. (1999). *Policy, Program Evaluation and Research in Disability: Community Support for All*. London: Haworth Press. ISBN 0-7890-0597-2.
- [11]. Rossman, G. B., & Rallis S. F. (1998). *Learning in the field: An introduction to qualitative research*. Thousand Oaks, CA: Sage Publications.
- [12]. Shneiderman, B. (2004). *The Eyes Have It! User Interfaces for Information Visualization*, University of Maryland College Park, MD 20742.
- [13]. Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.
- [14]. Taylor, S. J., and Bogdan, R., (1984), *Introduction to qualitative research methods: The search for meaning*, (2nd edition), New York, NY: John Wiley & Sons.
- [15]. Woodruff, R. B. (1997), *Customer Value: The Next Source for Competitive Advantage*, *Journal of the Academy of Marketing Science*, 25(Spring).
- [16]. Yin, R. (1989). *Case Study Research: Design and Methods*. Newbury Park, CA: Sage. ISBN 0-8039-3470-X.

Chuan-Chun Wu" A Study on the effect of E-commerce Webpage Design from the Perspective of User Interface" *International Journal of Business and Management Invention (IJBMI)*, vol. 08, no. 03, 2019, pp 01-08