

The study of influence of E-Branding on developing E-Commerce by using AHP method

Hossein Najafi¹, Najmeh Morshedlou²

¹Business Management (Marketing Major), Farabi Campus, University of Tehran; ²Neyshabour Branch, Azad Islamic University, Neyshabour, Iran

Abstract

At the beginning of third millennium, world's IT industry has been located in center of change and development, and countries like India, Malaysia, United Arab Emirates, England and Canada have managed plans and progressed. In Iran, also, for the purpose of recognition, transfer, absorption, localization and simultaneous development with information world and reinforcement of different aspects, the use of this technology and specially E-commerce, educational and research services, general information about advantages and applications of E-commerce and lack of necessary and continuous instructions are regarded as among such important issues on settlement of E-commerce in this country. One of factors that affects on efficient E-commerce is E-branding. In this article, we want to do research about the effect of efficient factors on E-commerce with E-branding. The result of this survey can establish one of the advantages of E-commerce that is E-branding and at the moment, it is in the shape of a hypothesis, and we disclose the path for development of this technology in Iran. This research was done with using AHP method.

Keywords: Electronic Branding, Internet, Electronic Commerce, Analytic Hierarchy Process Method

Introduction

At the beginning of third millennium, world information technology industry has been located as the basis of development and change and countries like India, Malaysia, United Arab Emirates, England, and Canada have thought about some solutions and have progressed (Fathian and Mahdavi Nour, 2007). In Iran also there's a need for careful and fast planning and performance for

identification, transformation, absorption, localization and synchronous development with information world, and improving different fields of using this technology and specifically in E-commerce, educational and research services, general informing and management. The lack of general information about E-commerce advantages and usages and need of continuous and necessary trainings are among very significant problems in settlement of E-commerce in a country (Rowley, 2004). Unfortunately in our country Iran, internet is mainly used for entertainment and playing game and less as an efficient instrument for buying and selling and increasing necessary information in business field.

The aim of this research is a scientific assessment of use of E-branding in E-commerce that is one of reasons for developing E-commerce in countries. Although a little step, it helps to development of this technology and its settlement and movement toward global village. The main discussion of this research is B2C business type (Business to Consumer) and C2C type (customer to customer). In this article we are going to measure the effect of E-Branding in development of E-commerce in countries. As we know, electronic environments make available the possibility of the creation of what we imagine in our minds, make in these environments by the virtual spaces that they provide for us (Ghods Pour, 2000). It is a privilege, specially when you want to use this environment for the extension for your commerce and have an successful e-commerce.

One of the most important factors to have on successful trade is to have an effective and influential brand which can introduce your company and product to the best form to the people while doing this act in electronic environment like Internet which it addresses is propounded world wide become more important. You must design the electronic brand so that you can develop your e-commerce. But what is the effect of designation of a

Corresponding author: Hossein Najafi, Business Management (Marketing Major), Farabi Campus, University of Tehran. Email: najafi.hossein@gmail.com

good and influential brand on e-commerce? Which factors are effective in designation of an electronic brand on e-commerce and how much is this effect? We would answer to this question in this paper. At first we have a short glance on the history and definition of the e-brand.

According to Murphy (2003), there is substantial research on branding via traditional media, yet little research of online branding. Brands have existed since early Roman times, but branding as a marketing tool is only about 120 years old. According to Ankomah Opoku (2006), a well-accepted definition of a brand name is a 'distinguishing name and/or symbol ...to differentiate ... goods or services from competition'. Brands become even more valuable as web use evolves from its initial exploration or 'surfing' phase. Most experienced consumers return to the same sites rather than 'surf the web'. The declining use of search engines and lower rates of clicking on advertising banners by Internet users further support **the existence of this trend. At the beginning**, we recognize the factors resulting from electronic brand. That is inflectional on e-commerce and measure the standard impression of these factors using the AHP method (Merz, 2009). We had considered same questionnaires for this purpose and had distributed them in the society that we were researching on it.

Research Population

With due attention to research subject and the information analysis methodology that is Analytical Hierarchy process and its research society has its own definition, research population are a group of E-commerce customers of some E-commerce sites. Because research society should be clear, so those who take participate in the research should have minimum information about E-commerce in order to be able to get included in our research society.

To do this work, the writer has got in contact with few E-commerce sites managers and has demanded for cooperation via e-mail, telephone and etc. the procedure is that managers and their co-workers have provided customers with designed questionnaires through e-forms, e-mails and verbally and asked them to fill the questionnaires. The managers were asked to present questionnaires to those customers who have repeatedly shopped from their sites since this shows the top information of customers from E-commerce.

Information gathering instrument

Here we use a 13 questions. This questionnaire has been confirmed by many professional business

mans. The questionnaire options include 5 options: Very much, much, average, little and a little. We use these options to attribute quality values to research numerical values in order to make Saaty's table. This table includes numerical spectrum from 1 to 9. Each question in this questionnaire is based on a research factors.

Information analysis

After collecting questionnaires, information should be classified and analyzed. As we mentioned earlier, we used AHP method. 100 questionnaires were delivered to research society that 70 questionnaires were received. Each questionnaire includes 10 specialized questions and each question has been designed based on one of goal Factors. Since the goal is identification of effect amount from one factor of E-branding which here is e-commerce. Due to this aim, business man experts and E-commerce professors have helped for questionnaires, research in operational research for collation of questionnaires with questionnaires in AHP method and a help is asked for identification of Factors in questionnaires questions from e-commerce experts.

In addition, author's studies and attempts have had a significant role in identification of reasons and collation of these questionnaires. There are three other questions in the questionnaire that is used for classification and harmonization of questionnaires.

These 3 questions are included to determine schooling level, age, and level of familiarity of questioned person in order to determine the questioned group. Because there was no available concrete statistical society till receive questionnaires, questioned persons are e-commerce sites customers that could be from each mentioned cases in the group and as a result this diversity leads to divergence between questioned persons that is against one of 4 principles of AHP method (inversion, convergence, dependency, expectations), therefore the questionnaires weren't received from those who had average information and under-diploma education and were separated from calculation and information analysis. The reason was that such people had less competence for measurement.

Lack of sufficient information about e-commerce and having low level education that will be mentioned as one of results by use of those separated questionnaires and their analysis. After studying and separating questionnaires we will refer to questionnaires analysis explanation with AHP method.

Analysis Hierarchical process

Identification of goal, factors, sub- factors, and Alternatives

Goal: E-commerce development

Factors: these Factors involve 10 cases:

1. **Search engines:** using an electronic brand and introducing it to the search engines, increases the possibility of acquaintance of customers to it resulted in the development of e-commerce in virtual environment.

2. **Customers with different culture:** by using powerful graphical and multimedia facilities, in electronic environment, we can design the brand in site so that is proportionate to the culture and nationality of every customer. It causes the attraction of customer in vast fields and develops trade in different cultures in electronic environments.

3. **Colors composition:** in virtual environment and graphical and multimedia facilities, and capable of creation 3D spaces we can design a brand which shows that the commercial company has original and the quality of article is unique and the customer's confidence is attracted to your brand in the first contact. Also this factor can be resulted to the development of e-commerce.

4. **Using symbols and signs:** when we use special symbols and signs in an electronic brand, it can be affected customers either in cultural or psychological aspects. Specially this work is achievable very well in virtual space with open intensity and 3D facilities.

5. **Suitable composition in using the colors and symbols:** using colors and symbols once coming together with a suitable composition causes that even at the same first look, the favorite electronic brand is imprinted in the customer's mind and as in terms engraves in customer's mind till next times the person refers to its e-commerce site and this matter resulted in development of e-commerce.

6. **Customers acquaintance:** virtual space of e-commerce provide this possibility to the designer of electronic brands so as to design the brand as it is the indicator of type of product and its quality and the customer decide with necessary recognition when selecting his/her brand and product.

7. **Psychological relations:** virtual environment is given the ability to creation of electronic brand to the owners of e-commerce sites in order to they can design their own brand so that in the first look, a brand make a connection with the customer through psychological relation by picture and the

existing space and this resulted in the attraction of customer and also the e-commerce is developed more than ever.

8. **Sincerely relationship:** when an electronic brand is created by top facilities and multimedia images, once attracts the confidence of customers creates a virtual character for the brand. A character that makes a sincerely and emotional relation with the customer and very time the customer refers to his/her favorite brand sit, imagine that he or she returns to visit his/her old friend and a feeling of loyalty will always accompany him/her.

9. **Easy statistical census:** by using electronic brand we can take census in electronic space, for customers and referent callers to our own commercial site and becomes acquainted with their comments in the wide range of world wide customers and by utilizing these feedback we can lead our trade into improvement according to the customer's desires and extend it.

10. **A short and easy brand:** it is better that as soon as possible the name of brand was short and easy so as to go down as easy as a nail in the customer's mind and imprint in it. meanwhile it is better that the commercial name is selected so that the customers that searching for special goods in virtual spaces like internet encounter with regularly and properly. This case is easily achievable in virtual spaces because we can introduce our brand to every body with a world of similar words and search engines like google and sites such as face book .

Alternatives: 1. Used of e-Branding 2. Unused of e-Branding

The making pairwise comparisons matrixes

After drawing tree it's time to make pairwise comparisons matrixes. As it was told we have 10 factors and 2 alternatives. Each question in questionnaire is associated to one factor and evaluates that factor. Each question has 5 options (very much, much, average, little and a little). If we want to collate them according to Saaty spectrum, they will change like this:

Table 1. Pairwise comparisons matrixes

Equivalent quantity	option
9	Very much
7	much
5	average
3	little
1	A little

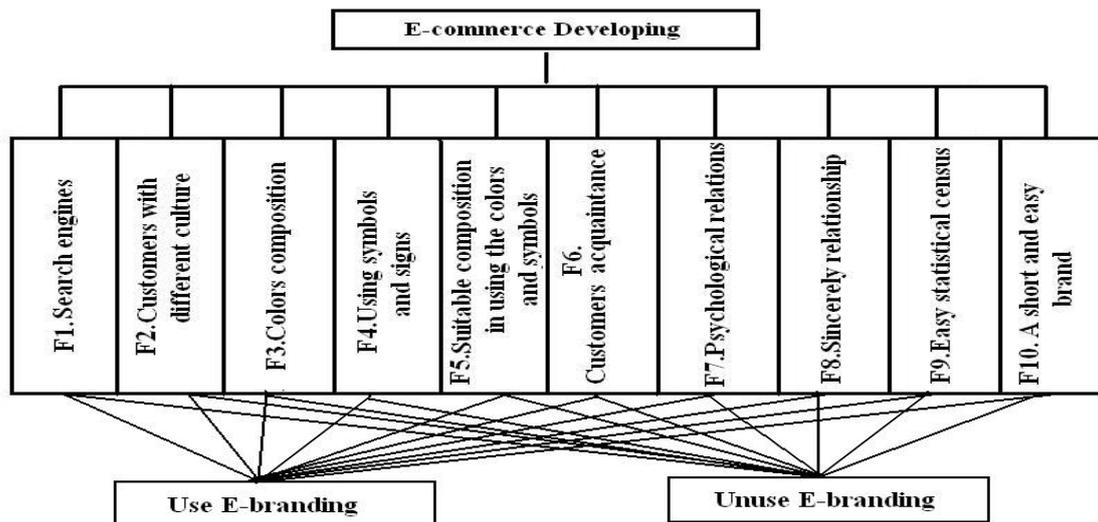


Figure 1. Drawing hierarchy tree diagram

After assessing questionnaires and registering answers based on above table, we put all answers in a column and determined arithmetical average or in other words a factor for each question. Because

of large numbers of questionnaires the accounts have not mentioned here, but the final resulting table for each factor after averaging has resulted to the shape below:

F10	F9	F8	F7	F6	F5	F4	F3	F2	F1	Number of Question & Factors
7.8	7.3	6.5	6.4	7.7	6.6	6.8	6.7	6.2	6.9	Average
8	7	7	6	8	7	7	7	6	7	Rounded of Average

Figure 2. Final resulting table

F1	UNEB	EB	F2	UNEB	EB	F3	UNEB	EB
UNEB	1	0.142857	UNEB	1	0.166667	UNEB	1	0.142857
EB	7	1	EB	6	1	EB	7	1
SUM	8	1.142857	SUM	7	1.166667	SUM	8	1.142857

F4	UNEB	EB	F5	UNEB	EB	F6	UNEB	EB
UNEB	1	0.142857	UNEB	1	0.142857	UNEB	1	1.125
EB	7	1	EB	7	1	EB	8	1
SUM	8	1.142857	SUM	8	1.142857	SUM	9	1.125

F7	UNEB	EB	F8	UNEB	EB	F9	UNEB	EB
UNEB	1	0.166667	UNEB	1	0.142857	UNEB	1	0.142857
EB	6	1	EB	7	1	EB	7	1
SUM	7	1.166667	SUM	8	1.142857	SUM	8	1.142857

F10	UNEB	EB
UNEB	1	1.125
EB	8	1
SUM	9	1.125

Figure 3. The matrix related to factorial comparison

After we determined quantities of each factors, we formed pairwise matrixes. Here, we should have ten 2*2 matrixes containing comparison of factor relative to alternatives and one 10*10 matrixes for comparison of factor in relative to each other. The important thing now is that the matrix related to factorial comparison is 1 since the factors do not have any preferences to each other.

In these matrixes:

F1	UNEB	EB	0
UNEB	0.125	0.125	0.125
EB	0.875	0.875	0.875
SUM	1	1	1

F2	UNEB	EB	0
UNEB	0.142857	0.142857	0.142857
EB	0.857143	0.857143	0.857143
SUM	1	1	1

F3	UNEB	EB	0
UNEB	0.125	0.125	0.125
EB	0.875	0.875	0.875
SUM	1	1	1

F4	UNEB	EB	0
UNEB	0.125	0.125	0.125
EB	0.875	0.875	0.875
SUM	1	1	1

F5	UNEB	EB	0
UNEB	0.125	0.125	0.125
EB	0.875	0.875	0.875
SUM	1	1	1

F6	UNEB	EB	0
UNEB	0.111111	0.111111	0.111111
EB	0.888889	0.888889	0.888889
SUM	1	1	1

F7	UNEB	EB	0
UNEB	0.142857	0.142857	0.142857
EB	0.857143	0.857143	0.857143
SUM	1	1	1

F8	UNEB	EB	0
UNEB	0.125	0.125	0.125
EB	0.875	0.875	0.875
SUM	1	1	1

F9	UNEB	EB	0
UNEB	0.125	0.125	0.125
EB	0.875	0.875	0.875
SUM	1	1	1

F10	UNEB	EB	0
UNEB	0.111111	0.111111	0.111111
EB	0.888889	0.888889	0.888889
SUM	1	1	1

Figure 4. Normalization of data

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
UNEB	0.125	0.142857	0.125	0.125	0.125	0.111111	0.142857	0.125	0.125	0.111111
EB	0.875	0.857143	0.875	0.875	0.875	0.888889	0.857143	0.875	0.875	0.888889

Figure 5. The results of normalization

After drawing the above figure, it presents us with weight of each factor in comparison with alternatives; it's time to calculate factor weight in relation to each other. As you see in the opposite figure and as comparing matrix of criteria in relation to each other shows, the criteria do not have any preferences together and the weight amount of each one in relation to each other is 1.

The computing of alternative final weight

So at the end of final weight of each alternative will be calculated like the figure below:

EB: symbol of using e-branding UnEB: symbol of unusing e- branding

Normalization

After this phase, we should start normalization.

After this phase, we should start normalization. After doing the mentioned calculations and transforming of information from column 0, we will have the results shown in Figure 5.

Final weight of alternative X = (weight of factor 1 in relation to alternative X₁ weight of factor 1 in relation to another factor) + (weight of factor 2 in relation to alternative X₂ weight of factor 2 in relation to another factor) +..... (Weight of last factor in relation to alternative X_n weight of last factor in relation to another factors)

According to above formula, the ultimate weight of alternative UNEB for e-commerce developing factor is calculated as this:

$$= (0.125 \times 1) + (0.142857 \times 1) + (0.125 \times 1) + (0.125 \times 1) + (0.125 \times 1) + (0.111111 \times 1) + (0.142857 \times 1) + (0.125 \times 1) + (0.125 \times 1) + (0.111111 \times 1) = 1.257936 \approx 1.26$$

Also for alternative EB, for e-commerce developing factor is like this:

$$=(0.875 \times 1) + (0.857143 \times 1) + (0.875 \times 1) + (0.875 \times 1) + (0.875 \times 1) + (0.888889 \times 1) + (0.857143 \times 1) + (0.875 \times 1) + (0.875 \times 1) + (0.888889 \times 1) = 8.742064 \approx 8.74$$

Conclusions

After analysis of information and doing necessary calculations, now we shall see what will be the answers of writer's questions? As a brief look at the beginning of the research it was told that the writer's going to assess the e-branding effects on developing of ecommerce Therefore, the e-branding factors would be assessed by AHP method. As seen in the last part of conclusions, the final weight of alternatives comes to a conclusion like this:

e-commerce developing factors:

By use of e-branding = 8.74, By unuse of e-branding = 1.26

As it is clear, the rank of use of e-branding in developing of e-commerce is 7 times higher than unusing of e-branding.

Look at the following computing:

$$1) \delta_1 = \frac{8.74}{1.26} = 6.95 \approx 7$$

$$2) \Delta_1 = 8.74 - 1.26 \\ \Delta_1 = 7.48$$

=>> In number 2 u can see utility of E-branding use 7.48 unite is more than E-branding unusing. So by Using E-branding we can develop E-commerce better than unusing E-branding.

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