Investigating the Effective Factor in the Successfulness of Websites Design

Nina Ghane[1],Hamdi Reza Shokrizade[2]
1. Ershad university, Iran, Tehran
2. Department of Management, Payame Noor University, PO BOX 19395-3697 Tehran ,Iran

Abstract
The success of e-commerce for any company, especially if it is not a well-known name, is greatly dependent on the appropriate design of its Website. This study investigates the determinants of an effective Website. A literature survey indicated that the major categories of determinants are service quality, system quality and information quality. The relative importance of each category was determined by counting the number of citations in the literature, and by soliciting the opinions of end users. The paper concentrates on experts' recommendations of how to create an effective Website from an e-commerce point of view. And for gathering the data we use from384 questionnaire among the client of websites. and for testing the data, we use from correlation and regression test, so according to finding all of the hypotheses are accepted.
Key words: Website design, service quality, information quality and system quality

1.Introduction

as the development of internet technology continues, coupled with the intensity of online competition and a simple mouse click to select a new provider, investigating website success is of crucial prominence for e-businesses to develop a website that decreases customer churn rate [1]. Reicheld and Schefter [2] remark that acquiring online customers is so expensive that startup companies may remain unprofitable for at least two or three years, meanwhile by retaining just 5 percent more customers, online companies can boost their profits by 25percent to 95percent.
Service quality is a key determinant in differentiating service offers and building competitive advantages, since the costs of comparing alternatives are relatively low in online environments [3]. Retailers that sell only services (telephone companies, airlines, banks) have little to offer if their service is poor [4]. In the context of e-banking, profitable website requires a strong focus not only on the acquisition of new customers but also on the retention of existing customers, since the acquisition costs in online banking exceed that of traditional off line business by 20-40 per cent [5]. In addition, the introduction of e-commerce has brought a dramatic change in the way relationships with customers are built and maintained. In banking, which has traditionally been a high contact service, the lack of direct human interaction in online channels entails the use of each service element as an opportunity to reinforce or establish quality perceptions for customers [6]. Some preliminary studies indicate a wide gap between anticipated and actual achievements from e-commerce systems [7]. This has motivated researchers to update information system Success model according to advent and explosive growth of e-commerce [8]. Therefore, e-commerce success is one of the important electronic commerce research issues [9].
Lertwongsatien and Wongpinunwatana [10] remark that majority of e-commerce success models have been developed and tested in western context and developed countries, however implementing technology in few developing countries has been accelerated within last decade. According to http://www.internetworldstats.com/stats5.htm, Iran internet usage has the utmost growth of 54.8% in Middle East within recent 8 years period. Given the fact that dramatic growth in internet usage in Iran provides technological infrastructure for e-commerce to be flourished, there is a silence on the ecommerce website success investigation in Iranian firms.

2.Literature review

"Information technology in general and the Internet in particular, is having a dramatic impact on business operations. Companies are making large investments in e-commerce applications but are hard-pressed to evaluate the success of their e-commerce systems.''[8]. Sinnapan and Carlson [12] affirm that developing the mechanics of website is based on the literature around both the information system and marketing fields. Therefore, both information system and e-marketing quality factors contribute to the website success. Many theoretical models have been proposed for measuring IS And e-marketing success to assess the quality of the website. Out of them Delone and McLean IS success model (1992) [13] is the most highly cited. Based on this model, three information system success factors including information quality, system quality and service quality. Delone and McLean [13] state that "Systems quality" measures technical success and defined as the customers' perception of a website's performance in product information retrieval and delivery; "information quality" measures semantic success and defined as the customers' perception of the quality of product information presented on website.

2-1. Service quality

Prior studies have stressed the importance of providing high quality of service[35,41]. Business organizations and Web designers should actively seek ways to improve service quality at Web sites. To make it more challenging, management and Web designers should carefully consider how to arrange and present customer service opportunities. This care is necessary because of the lack of face-to-face contact on a Web site. Thus, we propose hypothesis:

H1. Service quality is directly related to Web site success.

2-2. System quality

According to a survey conducted by the European Electronic Messaging Association, more than 79% of respondents said that design quality, especially security, is the top concern of EC customers [34]. However, security is only one aspect of designing the system quality. Anderson and Bezuidenhoudt [2] stressed that reliability is also needed, especially in consumer electronic markets. A reliable system should have quick error recovery and ensure correct operation

[10]. Thus, we propose: Page-Loading Speed; According to a survey conducted by Hamilton (1997) speed (i.e., slow speed) was the number one complaint of Web users (77%). Most potential e-commerce customers do not want to wait for a seemingly endless page to load. Instead, they hit the browser 'stop' button and go elsewhere. Therefore, large, pretty graphic files and "cool" animation may come at a price to the Web business owner in terms of lost business (Busch [June 1997, pp. 98-99]). In some cases page-loading speed is out of the control of the Website builder. Such factors as server speed, customers' computer power and modem speed, quality of telephone lines, and other factors are to be blamed. Navigation Efficiency Without efficient and user-friendly navigation, the user is likely to get confused, lost, or frustrated and leave the site for good. A good source for understanding the 'usability of a site' based on scientific studies is found at http://world.std.com/~uieweb. Security;Security has become a very important issue with the development of the Internet Websites.

H2. System quality is directly related to Web site success

2-3. Information quality

Prior research employed various measures of IS success, including user satisfaction, business profitability [7,28], improved decision quality and performance [26,29,33,40], perceived benefits of information systems [20,30,51], and the level of system usage [21,22]. All of them stressed the importance of information quality. This leads to the following hypothesis:

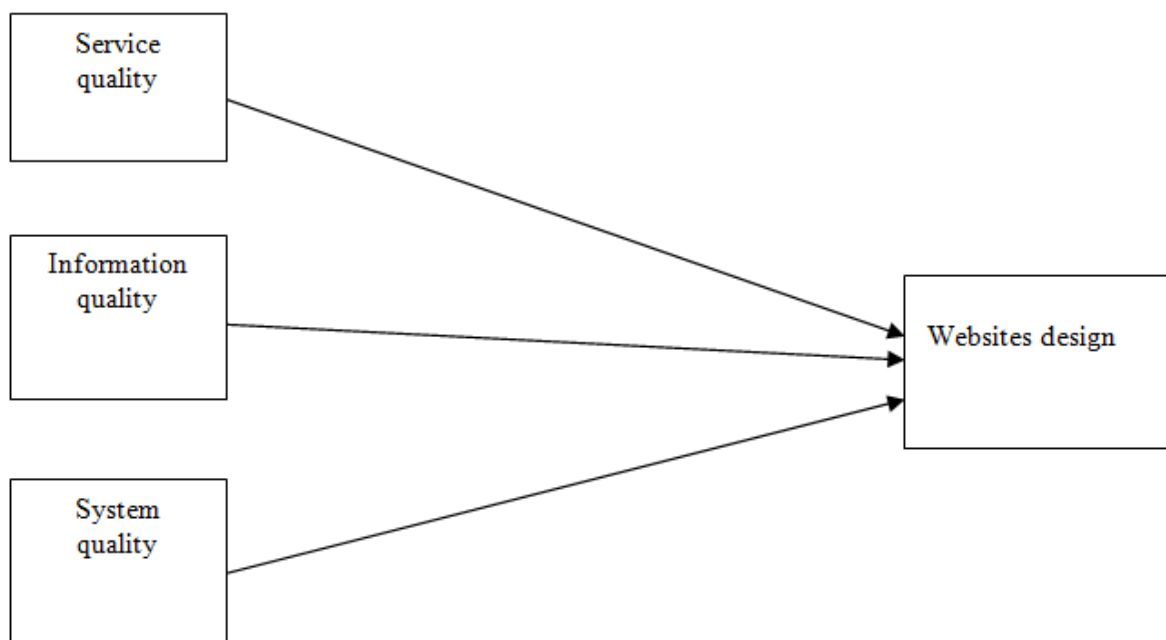H3. Information quality is directly related to Web site success.

Figure 1: the model of reasearch

3.Demographic Characteristics of Consumers

Table 2 gives information on the demographic characteristics of consumers. Majority of the respondents were females constituting 59%, while males constituted 41%. The table also shows that majority of the consumers were within the ages of 21 - 30 years (65%), while 25%

representing 102 consumers were within the ages of 31-40, and 8% under 20 years, and also just 2% between 41 to 50. Information on the education of consumers depicts that 49% had bachelor education, 6% had primary school education, 37 % had post-primary education, and 8% had Phd education, while 6.8 had postgraduate qualifications.

Table3-1: Demographic Characteristics of Consumers

Demographic	category	percentage	Count(n)
Gender	Male	38%	151
	Female	62%	223
AGE	Under 20	6%	30
	20-30	65%	219
	31-40	28%	105
	41-50	2%	8

4.Research methodology

Fig. 1 illustrates the research framework. The general methodology involved an electronic questionnaire survey of 120 consumer of online websites. This study is descriptive-survey research that in the following stages to describe the relationship between know factors that associated with trademarks and customer loyalty in marketing industry in software industry. And for gathering data, we use five-item questionnaire whit likert scale. The reliability of the questionnaire is 0.886 in cronbach alpha.

Table 4-1: the reliability of variables

System quality	Information quality	Service quality	Variables
0.902	0.89	0.79	Cronbach alpha

5.Data analyses

Table5-1:the result of testing hypotheses

hypotheses	Independent variables	Dependent variable	R	R^2	F	Sig	result
H1	System quality	Websites design	0.631	0.398	81.394	0.000	**Accepted**
H2	Information quality	Websites design	0.744	0.553	152.092	0.000	**Accepted**
H3	Services quality	Websites design	0.436	0.190	28.804	0.000	**Accepted**

As mentioned before, based on a comprehensive survey of the literature, three hypotheses were developed in this study. According to the statistical analysis of hypotheses examined the correlation between the variables in all of the hypotheses were confirmed., With the difference that the dependent variable intensity and the effect of independent variables on them, varied. However the of a look at the re to test this hypothesis, we note hypotheses and results.

The results of our hypothesis tests have shown, the effect of knowledge on various aspects of customer relationship management is different.

In the first hypothesis, system quality and has a coefficient of determination of 0.398 that is to show a high impact on websites design.

The second hypothesis, the information quality has a coefficient of determination of 0.553 that is to show a high impact on websites design.

The third hypothesis, the services quality has a coefficient of determination of 0.190 that is to show a less impact on and retain customer.

6. result and recommendation

a. Keep graphics simple and meaningful.

Wilson (1998) refers to excessive graphics as "Image Inflammation." He recommends limiting the total graphics and text for a single Web page to 60KB (HTML page text, background image, logo, navigation bar, navigation buttons, and award logos). A rule of thumb is to allocate about 5KB, 5KB, 16KB, 8KB, 16KB, and 10KB, respectively, to each of these elements). Some graphics are meaningful and necessary where it is imperative to display the product. For example, a flower sales site such as www.flowersworldwide.com would wilt if numerous photographs of the product were not used (Haine, 1998).

b. Limit the use of animation and/or multimedia plug in requirements.

Animation is a contributor to slow page loading. Haine (1998) recommends that if a designer thinks it is necessary to have animation, it should be made to stop cycling after ten seconds to allow the user to scroll it off

the screen. Nunley (1998) suggests that information content should account for 80% of the site .Audio clips and other multimedia gizmos that require users to download plug-in programs, install them, reboot and return to the Website drive away users. Blower (1998) advises against using proprietary tags and graphics requiring a banner stating, "Best Viewed with Brand X Browser." An anonymous author in the March 1998 Economist recommends that designers should not require viewers to download software to view a Website's Contents.

c. Use thumbnails.

Thumbnail graphics, which typically contain only about 10 KB, are an effective way to utilize

graphics without significantly increasing the page-loading time. Thumbnails give the user a choice of whether or not to wait for the loading of a larger picture without forcing it as a default

d. Provide 'text-only' choice.

Providing an option to load text only increases speed and allows the use of a greater variation of browsers (Heath,1998).

e. Check and monitor your server and Internet route.

Sometimes a slow Website is not the fault of the designer (Smith ,1997).

f. Use progressive rendering.

Sklaire (in Janal, 1997, p. 352) describes this term as allowing text to load first, followed by graphics. This allows the user to read the content while the graphics are loading.

g. Use clear and concise text with proper spelling and grammar to describe the business. This is by far the most commonly prescribed recommendation in the literature. Too often business Websites are ambiguous, one has no clue as to what the business is really about, what the company sells, or what its services are. An example is www.carleson.com, which presents too many companies, including major travel services, but you cannot even make a reservation. If icons are used, iconize only the most important subjects first. Headings, subheadings, and text should contain only about one-half the words one would normally use in a paper document. "It seems the majority of users – some 79 percent – merely scan pages without taking the time to read what they find …" (Guglielmo, January 1998, p. 1). Web users scan for two main reasons: 1) Reading from computer screens is tiring, and 2) Web users are too busy and have too much to read they do not have time to read long-winded pages. A study by Morkes (January 1998) proved that long-winded sites that were rewritten in concise language scored 159% higher in usability, which was measured in terms of task time, task errors, and memory .Gardyne (1998) provides nine recommendations: brief sentences; bulleted lists; short pages; highlighted ; colorful, descriptive paragraph headings; one idea per paragraph; most important point first in each paragraph; and half the word count (or less) of conventional writing. Also important to add to this list are proper spelling and grammar (Blower ,1998).

Finally, let us not forget font size/style/colors.

h. Provide contact information on each page.

A site with no information on whom to contact may drive business away. Smith (1997) recommends installing 'mail-to' links on every page. Maloff (1997, p. 70) suggests a more elaborate method, which is posting threaded on-line discussions, message boards, or even interactions via real-time, on-line chat.

i. Provide free services or useful information.

Free content is a valuable feature (Bancroft ,1997). But free content is likely to decrease as the Web becomes more mature and commercial. The Wall Street Journal, Business Week, and others provided free information for months and then started to charge for it. Wilson (1997) believes that prospective customers are more likely to purchase when site owners make sure that the free service is closely related to what is being sold. An interesting example is the services provided to Internet communities. An example is N2K that developed Web pages for specific communities (e.g., classical music lovers). Gardyne (1998) recommends that Websites should include useful resources and tools.

j. Use well labeled, accurate (no broken) links.

An ambiguously labeled link or a link that hits a dead end is one of the most annoying design faults in a Website. Haine (1998) recommends to word each link carefully so that it answers two questions: 1) "What will I get if I click here?" and 2) "Why would I want to get that?" Compare www.fool.com:80 with www.carpoint.msn.com.

k. Avoid the use of frames.

One of the reasons for using frames is when a company wants to make its logo visible from all underlying pages. But frames have been overused in many Websites. Tadjer (1998) brought out

these points:

· Frames make bookmarking difficult.

· Some browsers do not support frames.

Wilson (February 1998) adds: frames cut up the screen into windows that require excessive vertical and/or horizontal scrolling, they look ugly, they do not always print out correctly on some browsers, they are resented when site owners use them to link to from external sites, and their content is often skipped when search engine "spiders" come to call. Berst (1998) adds: some frames do not scroll when they should while others do scroll

when they should not and some frames produce a miserable patchwork effect. Bremser (1997) supports the use of frames bu only if the frame layout is made simple.

k. Keep navigation consistent. There is some disagreement in the literature on this issue. Wilson (February 1998, p. 5) states, "Provide as many alternate ways to navigate your site as necessary. Buttons, image maps, hyperlinks, search engines, and drop-down menu systems all contribute to overall user friendliness when used appropriately." Berst (1998, p. 1) disagrees by stating, "Sometimes you click on a left sidebar. Sometimes you get a drop-down box. Okay, I know we're all still inventing this as we go along. But if your core navigation metaphor changes mid-stream, you have committed a sin. Even if you haven't created perfect navigation, at least be consistent. Please." Tadjer (1998) supports a navigation bar on each page. Also, buttons on any navigation bar should be those that let customers make purchases (i.e., take the customer straight to the cash register).

l**. Stress the use of security.** To enable secure transactions it is necessary to implement SSL or SET technology. VeriSign, for example, at www.verisign.com provides a digital ID for a one-time fee of about \$350 and an annual fee of about \$250. As Tadjer (1998) states, "the words 'secure server' help to make the consumer feel safe. Also, an optional link to a security practices page and/or legal notices for visitors to read also add an additional calming effect." Sweet (1998, p. 60) listed eight credit card transaction processors that make electronic storefronts pay off and reduce fraud. These are CyberCash, CyberSource, IC Verify, Open Market, Verifone, VeriSign, IBM Internet Division, and ClearCommerce.

m. Promote your site.

· List keywords and then submit the page to important search engines like Yahoo and HotBot (Wilson, 1997).

· Create a page for each product and register each page with a search engine.

· Arrange reciprocal links with other business Websites.

· Include URL on stationery, business cards, brochures, and any company literature sent out to customers.

· Include URL on display advertising like classified ads, newspapers, and trade journals.

· Create a press releases section. Issue news releases using a news release service such as www.urlwire.com.

· Publish an e-mail newsletter.

· Send out an e-mail notice when something new is added to the site.

· Install a signature in your e-mail program to list phone number, URL, etc.

· Join a mall and/or on-line community. (Fowler,1997).

· Join a banner exchange program or purchase banners on other sites.

· Encourage visitors to bookmark your page.

· Create a catalog of products and/or services.

· Conduct contests.

· Collect visitor e-mail addresses; rent targeted e-mail lists, but do not send unsolicited e-mail (spam).

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