Navigating Customer Satisfaction – Web-site Issues

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Abstract. *It is widely recognised that many corporation are now using web sites and the Internet in their efforts to satisfy customers. The fact that the web site features are capable of influencing companies' image, is not only playing a significant role in how these companies cater to their customers' needs, but is also a reflection of how important it is to have a website that is easy to navigate. The research reported in this paper investigates the role of website navigational features in helping to shape company image. It further investigates the influence of specific website attributes in portraying the image of the corporations. The research has found that a visit to an organization's website can play a role in changing customer's perception re the image of that particular company.*

Keywords. Website, Image, Navigation, Australia.

1. Background

Anecdotal evidence suggests that a significant number of corporations use the Internet as part of their communication/marketing strategy. A research indicates that more than 80% of large businesses in Australia have web presence [1]. The web site issues are getting more and more attention recently, particularly among the researchers, e-business experts, and authors. The way the potential customers perceive a company's web site influences the image that company portrays to its customers. Thus navigation is a key challenge for websites designers.

In the mid 1990s some corporate executives predicted that web sites will be capable of influencing companies' image significantly [2, 21,25]. Especially in e-business environment this influence is gaining momentum, forcing companies to pay attention to web site features more than ever, as the customers' perceptions of web sites are becoming increasingly important for company's success [3].

Research undertaken by Huizingh and Hoekstra [4], has found that ease of navigation has the most impact on usability and perceived ability of the web sites. At times where the time is of essence it is becoming increasingly important to web visitors to be able to complete the task as efficiently as possible. This puts the web designers on notice to provide users with navigational tools that will enable them to obtain information or conduct a transaction very quickly.

There is evidence that consumers undergo attitudinal changes after visiting a web site [4]. This encourages companies towards attracting so-called "right" customers, instead of being focused on attracting large number of customers. Furthermore, companies are aware that the web site design is becoming a very important issue for them [5, 22, 24]. Additionally, the design of the web site, that is capable of helping people to move through information efficiently by providing appropriate links, is adding to the company's ability to achieve the profit [6]. According to Vredenburg [7], another way of increasing companies' revenue and profit is to have a web site that is very easy to use.

Some researchers, such as Chatterjee [8], businesses are getting focused on facilitating more effective transformations to the web-enabled business environments, as well, as on the improvement of the user experiences [7]. A research conducted by Rose and Straub [9] investigated the influence of some of the web site features on the consumers' attitudes toward e-service retailers, found that the influence of download time on consumer attitudes, did not

support the hypothesis that downloads delay has negative impact on consumer attitude toward web retailer. Even though Rose and Straub used a small sample of respondents, the research has provided a valuable insight into the relationship between the download delay and customer's attitudes toward web retailers. Some of Rose and Straub's ideas for future research have actually inspired this investigation into the possible influence of a number of navigational features on company image.

2. Research Methodology

The aim of this research was to investigate the relationship between the company's web site's navigation features and the company's image. This research also sought to see if and how the evaluation of the company's web site influenced users' perceptions of company's image. The research was guided by the following questions:

What is the relationship, if any, between the particular navigational features of the web site and the image of the company?

What are the most important features regarding navigation on a web site from the users' perspective?

Does visiting and "evaluating" web sites influence change in the perceptions about company's image?

There is a variety of tools for evaluation of web sites; however, there is very little evidence about a consensus among researchers about appropriate criteria for that evaluation [10]. After a careful consideration it has been decided to adapt the Web Effectiveness Review Tool[11], developed at Trinity College, Dublin by Dan Remenyi. (accessed 19/01/2005), for this project as this, in our opinion, is one of the most comprehensive ones available.

This research was accomplished in three phases. In the first phase a group of 68 MBA students from an Australian university were given a task to evaluate 68 web sites using MCIL website effectiveness review tool, available on (http://www.mcil.co.uk/). The use of this group of students was appropriate as they all were computer literate and had certain level of exposure to WWW, IS and IT issues. In the second phase collated data were analysed using qualitative and quantitative techniques. Findings and conclusions were drawn in the third phase.

Prior to the evaluation of the companies' web sites the participants were provided with the definition of the image taken from the Collins Cobuild Essential Dictionary: "the image of a person or organisation is the way that they appear to other people" (1995, p. 390). Afterwards they were asked to record their opinion about the image of the companies whose web sites they will be evaluating, on a scale from 1 to 10. 1 indicating a bad image and 10 indicating a very good image.

Secondly, participants were introduced to the MCIL and asked to indicate their opinions about the importance of particular navigation features on web sites. All of the participants were using the same set of 9 navigational criteria, outlined in the MCIL, to evaluate the web sites. The focus was on importance of:

1. Having a navigation system that is easy to use
2. Having a site map as an alternative method of navigating the site
3. Having an ability to return to home page from any page
4. Having internal search engine on disposal to visitors
5. Having home page on one screen
6. Having internal links on the web site
7. Not having broken links on the web site
8. Having text as well as graphic links (ALT tags) on the web site
9. Using frames on the web site

Participants were asked to record their answers on an ordinal Likert scale, ranging from 1 indicating low level of importance to 10 indicating high level of importance. Likert and similar scales have been used by many researchers in information systems and other fields, such as [9, 12, 13, 14, 15]. Finally, the participants were asked to express their opinion about the image of the companies, after they evaluated their web sites, again on a scale from 1 to 10. One indicating bad image and ten indicating very good image.

3. Findings

The nature of the acquired data guided the use of the appropriate statistical tests to be conducted. As the answers were measured on an ordinal Likert scale, it was appropriate to perform non-parametric statistical tests [16]. The

conducted statistical analyses included the Sign Test, Rank order, and Correlation Analysis.

The Sign Test was conducted to establish whether the participants changed their opinions about company's image after visiting and evaluating their web sites. The results of the Sign Test helped to gain an insight into the perceived companies' image before and after the evaluations. The Sign Test is often used on occasions such as "pre-test and post-test" [17] and "before and after study" [16], as well as pre-adoption and post adoption examination [18].

The sign test gave an indication about the changes in perceptions about companies' image after the evaluation of their web sites took place. The results of the Sign test are presented in Table 1.

Table 1. The Sign Test for the entire population

Pre-evaluation (Mean)	Post-evaluation (Mean)	Sign test P- value
7.8002	8.6632	.043

The results of the Sign Test indicated that there was a difference between pre-evaluation and post-evaluation. Looking at the P-value of the sign test performed, the difference was also statistically significant (<.05). In conlusion, the results of the Sign test showed that, for the entire sample, the "evaluation of the web site" had significant impact on the image of companies whose web sites were evaluated.

In orde to find out if there is any differnce in the impact of the web site features on companies' image in two gender groups of participants, the Sign Test was performed. The results of the Sign Test in the two gender groups are shown in Tables 2 and 3.

Table 2. The Sign Test for the group of males

Pre-evaluation (Mean)	Post-evaluation (Mean)	Sign test P- value
7.7762	8.2113	.269

Table 3. The Sign Test for the female group

Pre-evaluation (Mean)	Post-evaluation (Mean)	Sign test P- value
7.9921	8.7871	.037

As we look at the results of the Sign test in tables 2 and 3, we can conclude that there was a difference in pre-evaluation and post-evaluation in both groups. However, looking at the P-values of the Sign test, that difference was statistically significant only in the female group (shaded). This is indicating that the female group changed their perception about companies image after the evaluation proces took place. The possible reason for this has not been the focus of this research and can be investigated in a further research.

In order to find out if the relationship between the navigational features of web sites and the image of the companies existed, the correlation analysis was performed. The rezsults of the correlation analysis indicated that some of the of the web site features were correlated with the image. The results of the correlation analysis are depicted in table 4.

Table 4. The result of the correlation analysis

	WEB SITE FEATURES	Cor.
Image	Having a navigation system that is easy to use	.713
Image	Having internal links on the web site	.688
Image	Not having broken links on the web site	.666

In order to establish the rank of the importance of navigational web site features for the entire sample of students, their medians and means were computed, and presented in table 5.

Table 5. Rank order for the features in the "Navigation" criterion in the entire sample

R	Features	Median	Mean
1	Having a navigation system that is easy to use	9.0000	7.7991
1	Having internal search engine on disposal to visitors	9.0000	7.5542

3	Having an ability to return to home page from any page	9.0000	7.3311
4	Having internal links on the web site	8.0000	8.0023
5	Not having broken links on the web site	8.0000	7.9793
5	Having home page on one screen	8.0000	7.6663
7	Having a site map as an alternative method of navigating the site	8.0000	7.4610
7	Having text as well as graphic links (ALT tags) on the web site	8.0000	6.9967
9	Using frames on the web site	7.0000	7.5475

Looking at the Table 5 we can conclude that among most important web site features in the entire sample are: having a navigation system that is easy to use, having internal search engine on disposal to visitors, having an ability to return to home page from any page, having internal links on the web site, etc.

4. Conclusion

The conducted research indicates that the evaluation of a company's web site has the ability to change company's image in the minds of the visitores/users/customers. According to the findings of this research the female population is more susceptible to changing their minds after they have visited and evaluated particular web sites.

As the focus of this research was on the navigational issues, we can conclude that particular attention should be payed to the navigational features significantly influencing company's image, as well as to those ranked as very important by the participants.

From the users' point of view, the most important features in the navigation criterion include: having a navigation system that is easy to use, having internal search engine on disposal to visitors, having an ability to return to home page from any page, having internal links on the web site, etc.

On the other hand, the features that significantly influenced company's image included: having a navigation system that is easy

to use, having internal links on the web site, and not having broken links on the web site.

A major limitation of this study is a relatively small sample size, thus preventing more grounded implications to be drawn, and implicating limited generalisibility. Nevertheless, the convenient samples used in this research has provided us with the valuable insights into the influence of navigational web site features on a company's image.

The findings from this research are similar to findings from other similar studies undertaken elsewhere [19, 20]. In an attampt to test the findings from this research, the future research will be conducted with the customers.

5. References

[1] NOIE, "The Current State of Play: Online Participation and Activities," *Australian Government*, Canberra 2003

[2] Dyson, E., (1997): Mirror, Mirror on the Wall, *Harvard Business Review*, Vol. 75, No. 5, pp. 24 – 25.

[3] Zhang, P., von Dran, G.M., (2002): UserExpectations and Rankings of Quality actors in Different Web Site Domains, *International Journal of Electronic Commerce*, Vol. 6, No. 2, pp. 9 – 33.

[4] Huizingh, E., Hoekstra, J., (2002): Why do Customers like Web sites? *Journal of Targeting, Measurements and Analysis for Marketing*, Vol. 11, No. 4, pp. 350 – 361.

[5] Agarwal, R. and Venkatesh, V.(2002): Assessing a firm's Web presence: Aheuristic evaluation procedure for the measuremen of usability, Information Systems Research, Linthicum: Jun. Vol.13, Iss. 2; p. 168.

[6] Bock, W. (1999): *Montana Business Quarterly*. Missoula: Autumn, Vol.37, Iss. 3; p 11.

[7] Vredenburg, K. (2003): Building ease of use into the IBM user experience, *IBM Systems Journal*. Armonk: Vol. 42, Iss. 4. p. 517.

[8] Chatterjee, D., Grewal, R. and Sambamurthy, V. (2002): Shaping up for e-commerce: Institutional enablers of the organizational assimilation of web technologies. *MIS Quarterley*. Mineapolis: Jun. Vol. 26. Iss. 2. pg. 65.

[9] Rose, G.M., Straub, D.W., (2001): The Effects of Download Time on Consumer

Attitude Toward the e-Service Retailer, *e-Service Journal*, pp. 55 – 76.

[10] Kim, S., T. Shaw, and H. Schnider, "Web site design benchmarking within industry groups," *Internet Research.*, vol. 13, pp. 17, 2003.

[11] MCIL, vol. 2005: MCIL, *Management Centre International Limited*, 2005.

[12] Boyton, A, R. Zmud, and G. Jacobs, "The Influence of IT Management Practice on IT Use in Large Organisations," *MIS Quarterly*, vol. 18, pp. 299-318, 1994.

[13] Blackwell, C. A., "A Good Installation Guide Increases User Satisfaction and Reduces Support Costs," *Journal of the Society for Technical Communication*, vol. 42, pp. 56-60, 1995.

[14] Kuzic, J. and McGrath, M. (2003), "Drivers and perils of e-commerce in the Australian wholesale and retail industry", *Proceedings of the 25th International Conference on Information Technology Interfaces* (ITI 2003), Cavtat, Croatia, June 16 – 19.

[15] Kuzic, J and McKay, J., (2004) "Pitfalls of Electronic Commerce in Large Organisations", *Proceedings of the 12th European Conference on Information Systems*, Turku, Finland, June 2004

[16] Siegel, S. (1988): Nonparametric Statistics for the Behavioural Sciences, *McGraw-Hill*, Inc;

[17] Cramer, D. (1998): Fundamental Statistics for Social Research, Step-by-step Calculation and Computer Techniques Using SPSS for Windows. *Routledge*, London

[18] Karahanna, E., Straub, D., Cherveny, N., (1999): Information Technology Adoption Across Time: A Cross – Sectional Comparison of Pre-Adoption and Post – Adoption Believes, *MIS Quarterly*, Volume 23, No. 2, pp. 182 – 213.

[19] Kuzic, J. and Dawson, L., (2004), "Does it Really Matter? - First Impression from the Company's Web", *Proceedings of 17th Bled eCommerce Conference eGlobal*, Bled, Slovenia, June 2004.

[20] Madnick, S. and Siegel, M. (2002): Seizing the opportunity: Exploiting web aggregation, *MIS Quarterley*, Mineapolis, March, Volume1. Iss.1. pg. 35

[21] Sun, A. and Lim, Ee-Pang, 2006, 'Web unit-based mining of homepage relationships', Journal of the American Society for Information Science & Technology; Feb2006, Vol. 57 Issue 3, p394-407, 14p.

[22] Couture, J., Colle, H. and Reid, G., 2005, 'Navigation Fidelity in 3D Perspective Displays for *Web*-Based Shopping: From Nodes to Views', International Journal of Human-Computer Interaction; Nov, Vol. 19 Issue 2, p181-200, 20p.

[23] Jones, K., Farris, J. S. and Johnson, B. R., 2005, 'Why Does the Negative Impact of Inconsistent Knowledge on Web Navigation Persist?', International Journal of Human-Computer Interaction; Nov, Vol. 19 Issue 2, p201-221, 21p

[24] Bart, Y., , Sultan, F., and Urban, G. L., 2005, 'Are the Drivers and Role of Online Trust the Same for All *Web Sites* and Consumers? A Large-Scale Exploratory Empirical Study', Journal of Marketing; Oct, Vol. 69 Issue 4, p133-152, 20p

[25] Donaldson, S.A., 2004, 'Looks do matter', Wearables Business, Sep, Vol. 8 Issue 11, p12-12, 1/4p.