

Supportive Web Design for Users from Different Culture Origins in E-Commerce

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Abstract. This paper presents an investigation of supportive design features for users from different cultural origins in global e-commerce sites applying the principles of human computer interaction to web interface design. This investigation was necessitated from a need to establish an understanding of the barriers in the implementation of e-business on a global level. The paper begins with an overview of current business-to-user (B2C) e-commerce implementation on the web, and then describes cultural issues in the global e-commerce.

Keywords: culture, e-commerce, web design.

1 Introduction

In a global context, a good web design for attracting international users in BtoC e-commerce is a challenging issue. A good web design supports effective business activities and user satisfaction. Therefore a supportive web interface is the essential concern in a competitive global market. Business developers are stepping up the use of new technology to achieve their goals but there is little concern in expanding their markets beyond their home countries expect for English speaking users. It is expected that such an expansion in e-commerce will support the economy of several nations and create new opportunities in and around their physical locations. Cultural differences may also be reflected in user-service provider relationships, communication channels and user expectation levels of information service functions. So a good web design enables support opportunities for increasingly diverse culture users' involvement by reducing cultural and language barriers that may exist for being part of a global market through the Internet.

2 Background

In Human Computer Interaction (HCI), there is substantial literature suggesting that supporting user trust and response to a web design are far more important than just entertaining users though fancy features [1-4]. There are many different approaches for designing web sites, supporting users, and in designing web sites to help users

efficiently achieve their goals [4-10]. Certainly several design approaches are continuously evolving. Though, general design guidelines in the Human Computer Interaction are always relevant. Literature suggests that the elements of the quality of navigation and information presentation are essential [8, 11-15]. Particularly, the literature relating to user trust in HCI puts an emphasis on user motivation and satisfaction, relating to quality of navigation and information presentation [16-18]. However, most of the time international e-commerce sites are directly translated into different languages at most and distributed to different country origin users. In an international context, the image features employed in interface development makes a somewhat lesser impact on the variety of contexts it is concerned with, although it will be very clear to a minor proportion of the population [19]. This provides an indication that consideration of human factors in the design of web for an international user base is an important factor in promoting effective usage of information systems. However most web interfaces do not support effective usage due to use of unsuitable images in a global context. Most of the information is presented on the web by icons, metaphors, shapes, colors of text and background, frame and text locations on screen, etc. These may be relevant to their culture of origin but may not be understood by the global audience.

Another general principle for designing interfaces is minimisation of memorising, optimisation of operations and engineering for error [20]. Also the use of attractive multimedia features in a page should not interfere with the speed of the web site download (maximum download time 10 seconds) [21]. The user should be able to interrupt any multimedia display if it takes to display more than 20 seconds. Generally, customers are seeking information with some expectations. So the effective display of information on the web site is an important issue when designing a usable e-commerce site. Some recent literature has discussed about localised design issues in language, context and user performance, and design of localised interfaces needs to be based in local culture [22-24]. However the key issue of how designers are influenced by their culture and incompatibilities with users' cultures has been ignored and not been investigated so far. Design of web sites for effective use is a highly innovative process involving intuition, experience and resolving various technical issues.

3 Aim and Approach

3.1 Aim

The study's aim was to find supportive design features by identifying web design characteristics in different countries. This was achieved through examination of users' experiences in global e-commerce sites, focusing on favorite site features and preferences for Australians and Korean users.

Australia is a recognised multi-cultural society, based on migration from many different countries established over the past two hundred years. The population adapts many cultural features from different countries and incorporates it into an evolving Australian culture. The population spread is about 78.5 % English only spoken at home, and the balance with Italian, Greek, Cantonese, Arabic and other minority cultures [25]. The majority of the population show a distinct European outlook towards

business practices and cultural interpretations. There is however, a substantial proportion of the Australian population who navigate between the main cultural sphere and their ethnic subculture simultaneously. Hence, they are influenced by their cultural backgrounds in negotiating everyday transactions of life, including surfing of web sites and purchasing goods and services online. For improving e-commerce usage in different e-commerce sites and web design issues, this paper discusses issues which should be addressed to suit international customers on a global level. This paper addresses issues relating to users' experiences and preferences on e-commerce sites in two different countries.

3.2 Approach

The research methodology used in this study was survey based, with participants from Australian and Korean participants residing in Australia. The research method combined quantitative and qualitative research methods as described in references [26, 27]. The process involved data collection through questionnaires, and interviewing participants. This approach enabled confirmation of generalizations and testing the impact of cultural differences on users' preferences.

According to Hofstede's dimensions [28] and Galdo and Nielson's [29] findings, the collectivist-type users have common behavior as a group, and under individualism, users want to have control over their surrounding environment. Hence these characteristics can be reflected in typical attitudes used in web based e-commerce. Korea is an example of collectivist society as identified by Hofstede [28], while Australia has an individualistic culture. Difference in users' country of origin is the most important factor for the site implementation. However current e-commerce practices take minor account of cultural issues while design technologies continuously attempt to introduce more attractive and convenient tools for local users. Table 1 describes different nature of individualism and collectivism based on Hofstede's study [28]. From Hofstede's study [28], there are different cultural aspects in Australia and Korea (South), which are comparably opposite. From this view, different cultural aspects will impact on e-commerce differently.

From the point of view of developing a good e-commerce web site, there are always issues about lack of collaboration in design, layout and information presentation that need to be resolved successfully to achieve a satisfactory outcomes [8, 30]. Also user's culture has a strong influence on the customers' (or users') responses, feeling, trust and/or satisfaction [31, 32]. Users feel and act on web sites within the culture. Users' negative or positive reaction to e-commerce web sites needs to be understood and identified in e-commerce practice.

In Chau et al's (2002) study on user behaviour in relation to culture in e-commerce, it was argued that e-commerce users are different in nature as they are surrounded by different cultures, and the emphasis should be on local user preferences. This is the key issue in supporting e-commerce practices. Even though the Chau et al's study has not fully investigated users' responses from the same e-commerce web site in different cultures, it shows user responses in e-commerce sites and has important implications in improving user responses. Rose et al (2003) also emphasised that culture has a major impact on user responses to e-commerce sites. Rose et al's (2003) study shows that, users understanding of information on the web will be different to users from different

Table 1. Differences in individualism and collectivism based on Hofstede's study [28]

Nature	Individualism	Collectivism
Attention	Everyone grows up to look after him/herself and his/her immediate family only	People are born into extended families or in other groups which continue to protect them in exchange for loyalty
Identity	Identity is based in the individual	Identity is based in the social network to which one belongs
Communication	Low-context communication	High-context communication
Employee-employer relationship	Employee-employer relationship is a contract supposed to be based on mutual advantage	Employee-employer relationship is perceived in moral term, like a family link
Management	Management of individuals	Management of groups

cultures. Therefore presenting information on e-commerce sites can be an essential issue for users and providers. Barber and Badre's (2000) study about merging culture and usability work is a helpful guideline for attracting potential international users.

We targeted two user groups from Australia and Korea (South) and the survey responses were analysed, comparing user experiences. The researcher approached the users individually in several social group settings. Then the researcher conducted surveys followed by a short semi-structured interview within the social group. Each user completed the questionnaire, with 62 Australian and 100 Korean (South) respondents. Amongst the Australian participants, 53 were born in Australia, and rest of the respondents were not born in Australia (6 from UK, 1 each from China, Ireland and Sri Lanka). Korean (South) respondents were all born in Korea (South).

The questionnaire was formulated separately for Australian and Korean (South) groups in English and Korean languages respectively. The questionnaire contained four categories of information: user background, favourite site and services, reasons for using Australian based sites, user feelings about the sites and whether they found sites from their home country useful.

4 Findings and Comparison

4.1 Findings

The most favourite sites in the two groups were "ebay.com.au" for Australian respondents and "daum.net" for Korean (South) respondents respectively. The two groups

were found to have distinctly different interests in e-commerce sites, Australians used the e-commerce sites for purchasing various types of goods from global and local e-commerce sites, while Koreans (South) were interested in using multiple services in a single e-commerce portal especially focussed on local sites and the most favourite item for the Korean (South) respondents were fashion items.

Australian and Korean participants responded that the most popular site for searching products was an auction site. They were browsing for clothes, tickets and other products as listed in Table 2. On the other hand, Koreans seem to have a strong motivation in use of the e-commerce site for checking email, searching for fashion goods, reading news, downloading games, downloading songs, searching for electronic goods, etc.

Table 2. Survey responses-user favourite goods and services

Favourite goods/services			
Australian	count	Korean	count
auction items	20	email	14
clothes	4	fashion goods	12
entertainment tickets	2	news	6
browsing	1	game	4
computer (hardware/software)	1	computer (hardware/software) and download songs	5
flight tickets	1	checking price for digital cameras	4
horse gear	1	comparing prices (looking for discount or a cheap price)	4
electronic goods	1	gym equipments	3
no answer	30	electronic goods	1
		no answer	47
Total	62		100

No Australian respondents had experienced the use of a Korean (South) site prior to this study. In contrast, most of Korean (South) respondents were familiar with or had experienced an Australian site. The reason for this is because most Korean (South) respondents who participated in this survey were visiting Australia or residing for a period of time in Australia. However, Korean (South) respondents preferred to use sites based in Korea (South) first, and then went on to global sites if they wished to make purchases. The language barrier was the most stated reason in both the groups. However there are other possible reasons including differing attitudes that influences their preferences for making purchases on global sites for both the survey groups.

Korean (South) respondents also commented that they felt different about Australian sites in the aspect of having a different reason for finding information (15%), delivery methods (10%), payment methods (9%), language (10%), speed (3%) and

other unspecified reasons. It implies that perhaps users not only depend on language but also on sensitive characteristics of product information on e-commerce sites and other services for making decision to make purchases or usage of services.

4.2 Comparison – Two Culture Groups

The study shows that majority of the Korean (South) users prefer to use same popular communication tools, and looked for similar types of products, and wanted to be connected to a popular site, all characteristics of collectivism. In the Australian group, users looked for similar sites but were more focused on personal interests. In a way, Australian users were found to have a combination of characteristics from both the collectivist and the individualist traits. It perhaps provides an indication that the characteristic traits in the Australian group probably relate to the factor of the diverse countries of origin of respondents within in the Australian group.

Australian and Korean (South) groups also demonstrated different preferences in local (Korean (South)) and global e-commerce sites. The Australian group had no boundaries in visiting local and global sites, while the Korean (South) group had a distinct interest in visiting only local sites. Australians were more likely to find products from local and global sites while Koreans (South) preferring to find information in the local (Korean (South)) sites and then the global sites as an alternate choice. This shows that the 'e-mall' type of e-commerce model has popular names as 'portal site' and seems to work for Koreans but not for Australians.

According to Hofstede's (1980 and 1991) cultural dimensions, comparing Australian and Korean populace, Australians have a high score in individualism and masculinity in comparison to high scores for Koreans in power distance, uncertainty avoidance and long-term dimensions. However from this study, the results show the cultural dimension of individualism was different from the Hofstede's study (1980 and 1991) in this instance. Other dimensions could not be applied because they were not prominent from the interview data. Though in the current study Hofstede's dimensions of individualism vs. collectivist were not numerically measured, these were interpreted from the study through participants' comments during the interviews. From the interviews, the cultural dimension of individualism was found to be higher for the Australian culture and collectivism higher for the Korean culture confirming Hofstede's outcomes (1980 and 1991).

5 Conclusion

The result shows that the characteristics of design features in different countries were identified in BtoC e-commerce on the global level. Overall, the design of favourite sites for Australians look relatively simple compared to Koreans' favourite sites. The global site based in USA provided similar design features to the Australian site except display of local products and images. The Koreans' favourite sites looked very different from Australian preferred site. Features such as use of multiple menus and contents contained various types of information, products promoted for shopping and community communication tools. This study with Australian and Korean (South) group of respondents provides an understanding of what customers need to support

e-commerce in different cultural settings. Also, this concept can be extended to help in creating supportive web design for users from different cultural origins in e-commerce, especially for users positioned in both collective and individual cultures simultaneously.

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