

# Challenging Web Design and Cultural Issues in International E-commerce Sites

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**Abstract:** The web design for international e-commerce sites is becoming an increasingly important issue. This paper addresses issues about cultural differences in web design and designers' views. The summary of research work includes understanding of designers' attitudes and approaches in designing web sites for different countries. Some suggestions about important aspect of localized design are made from case studies conducted during this research.

## 1. Introduction

Web design for international customers is an increasingly important issue for web-based e-commerce. This research focused on web design issues for customers in different countries, particularly in business-to-customer (B2C) e-commerce, including an understanding of designers' approaches. This paper begins with an overview of current approaches in the global e-commerce design. The investigation attempts to identify barriers in designing e-commerce on a global level.

Generally, a good web design increases customers' interests and interactivity. Web design and web interactivity are increasingly important for e-commerce for information presentation to the customer. However design is only on a small part of information presentation service function provided to the customer. Most likely, cultural differences reflect in user-service provider relationships, communication channels and user expectation levels of information service functions. E-commerce service providers including web designers are stepping up their use of new technology to achieve their goals, i.e. customers get products and services that they desire and the providers provide these with efficiency. The web developers have realized the importance of providing localized information so that businesses expand their markets beyond their home countries. There are great opportunities in different countries for niche products and services to become a part of the multinational e-commerce. It is expected that such an expansion in electronic business will support the economy of several nations and create new opportunities in and around their physical locations. The issues of suitable web design for international customers are significant factors in global business implementation. This paper describes some current approaches in dealing with web designers' attitudes in Australia and Singapore.

## 2. Overview of Current Approaches

Presentation of business and service offers through the web is conveyed by developers' ideas and customers' perception of choices. Information on the web relies on both groups forming a common perception. In a global context, most web interfaces do not support effective usage as most of the information is presented on the web by icons, metaphors, shapes, colors of text and background, frame/text locations on screen, etc. which may be relevant to the culture of origin but may be misinterpreted by the global audience.

Generally, web design features are directly translated into different languages at most and distributed to users internationally. In an international context, the web content features employed makes a somewhat lesser impact in the variety of contexts it is supposed to be effective in, although they may be clear to a minor proportion of the population. Thus a consideration of human factors in the design of web for an international user base is an important factor in promoting effective usage of information presentation.

### **3. Web Design and Challenges**

Challenges of web design are how to provide appropriate information to satisfy users, and give benefits to business providers. From the designer's view, providing a good interface possibly start with an understanding of customers' interests. The following two sections describe two aspects of web design that are important for customers.

#### *3.1 Information on the Web*

Generally, customers are interested in information, representing style and interaction with web usage, depending on the quality of information. Sometimes, the amount of graphical components supports customers' understanding. Visual information on the web is increasingly important to support information as well as interaction between customers and business providers. Visual information promotes customer understanding, acceptance and determination to purchase products from the web. In global markets, users are sensitive to interaction with product information on the e-commerce sites.

Del Galdo and Nielson [3] demonstrated that color and web page design directions have different psychological and social associations in different cultures. More importantly, different users have different concepts of web page usage. Design of web sites normally need to consider Latin-based screen design starting from the top left-hand corner or a Chinese language style starting from top right-hand to bottom left-hand. In such difference in script writing concepts, it is very difficult to provide localized screen designs if they are not included in the original design. Resources are currently available for web designers who wish to maximize the usability of a web site including usability guidelines. Collections of human factor references, web sites intended as a gateway to human factors resources and companies offering web-focused human factors consultancy. Also Human Computer Interaction (HCI) theories, methods, techniques and tools may be applied to the study of computer-mediated communication (CMC) in general, and web sites in particular [1] [4].

#### *3.2 Web Design and Cultural Issues*

Web design is concerned with what a web site will look like and how it will communicate with customers [1]. The issue for IT professionals and researchers, business developers is to develop sufficient theories and models to describe behavior of humans who use information systems, with the aim of designing systems more effectively. Cultural factors in information systems are likely to impact on effectiveness through web design.

A good web interface provides user satisfaction and conveys trust, such that a user can easily find general bearings of the information presentation scheme and retrieve the information they need. Design of web sites for effective performance is a complex and highly creative process. It combines intuition, experience, and careful consideration of numerous technical issues and investigations [2]. Moreover without proper consideration of cultural factors in design, the impact of culture is undermined and certainly does not position as an important issue. Culture influences certain methods of performing tasks, even common tasks in certain ways. Practices result from life long training of human and set

rules and circumstances. Hence, localized e-commerce sites deal with how differences between people from different cultures impact their behavior in specific circumstances.

History and values can also impact on user's perception. E-commerce advocates have substantial claims made for the web's effectiveness as a tool in the sales process to customers. However, little real research has addressed these factors that will make customers buy, when in electronic shopping malls. Findings from cultural factors research for e-commerce could be beneficial for web developers catering for a domestic customer base, as well as for an international market with the specific understanding of their culture and the human behavior it promotes. Particularly, understanding of designers' aspects from different countries through this study may add more value to web design in e-commerce sites for the benefit of providers as well as customers.

## **4. Case Study**

### *4.1 Objective*

The objective was to identify web designers' preferences when they design web sites, and determine their approach in different countries. Generally, they apply their knowledge and ideas while designing websites, negotiating the final content with businesses so that both have a common understanding of the information being offered to the community. In this paper we investigated designers based in two different countries, Australia and Singapore to study their approach to web design for e-commerce. There are many ways that culture can be reflected in the web design and this influences their way of presenting information on the web. This research seeks differences in designers' aspects through cases, such that the outcome may provide some benefits to web providers and global e-commerce companies.

### *4.2 Approach*

The research method used in this study was the exploratory case study approach as outlined by Yin (1994). The qualitative research method was used to answer questions about people's behavior towards effective web design. Yin (1994) defines case studies as "an empirical enquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between a phenomenon and context are not clearly evident". Case studies are especially effective for studying subtle nuances of attitudes and behaviors, and examining the web design processes and implementation. The case study was the preferred method used, since what this research sought to obtain was the depth of understanding of the designer's attitude and behavior within a particular setting or context.

The process involved interviews of participants and also studying the web sites developed by these participants. This meant that more than one research method had to be used for data collection. However this approach was beneficial to confirm the generalizations and to test the impact of cultural differences on web design. This research attempted to formulate more precise objectives for further research.

The study involved the use of interviews, documents and participant observation to understand the social and cultural phenomena. For this research, although cultural generalisations needed to be confirmed, it was realised that cultural differences cannot be revealed directly. The research method that was used in this study was exploratory case study (Yin, 1989). The process involved interviewing participants and also studying the web sites developed by the participants. This meant that more than one research method had to be used for data collection. However this approach was beneficial to confirm the generalizations and to test the impact of cultural differences on interface design. This study attempted to formulate more precise ideas for further research.

There was a study based on the Hofstede's dimensions (1997) of collectivism and individualism on web design by Del Galdo and Nielson (1996), comparing Japan and the United States. They mentioned that collectivist-type users would like to have common group behaviour at an organizational level. Under individualism users want to have control over their surrounding environment. These characteristics are reflected in typical attitudes used in e-commerce. Singapore is a collectivist society as identified by Hofstede (1997), while Australia has an individualistic culture. Based on Hofstede's findings, we decided to select ten companies, half from Singapore, and half from Australia. These case studies were conducted through a combination of face-to-face interview, email and on-line interview with over ten web designers/developers. The data were used from selected participants to draw conclusions about the impact of cultural differences on the interface design. The case study used interviewing as a primary method for gathering data from each cases. An informal, semi structured, interview style was used. This allowed participants to express their views freely and to feel comfortable during the interviews. The interviewer conducted the interviews using a set of open-ended questions, and built up the case.

The focus on data analysis was on findings patterns and regularities within the data. The analysis included data reduction, display and verification. The data were used from selected participants to draw conclusions about the impact of cultural differences on interface design. Web design components were divided into six attributes of display colors, image representations, symbols, animations, pictures and functionality (see table 1). Then web designers' preferences and attitudes were observed in creating new web page designs.

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**Web design components**

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- Use of display colors
  - Image representation
  - Use of symbols
  - Use of animations
  - Use of pictures
  - Functionality of the web site
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*Table 1: Web Design Components Divided into Attributes*

### 4.3 Result

In general, Australian designers preferred to have more functional websites such as ordering and search options. Singapore designers preferred to display information on images rather than focus on text. They also maintain and change website information more frequently than Australian designers. Australian customers preferred more direct and open communications, content oriented web sites and did not regard pictorial information as important. Australian web developers and companies had no particular preference for colours, animations, pictures and symbols. Company prestige was considered to be more important than image, and mainly used text based information. Australian designers feel they should contribute their opinions when building a website. Customer reaction is the major influence on design, so that, they provided information with images, animations and company logos as per companies' requirements. Australian companies did not perceive signs and symbols to convey meaning. Australians believe in doing things to build trust.

Those interviewed Australian web designers mentioned that web sites could be created not only depending on clients' requirements but also generating their own ideas. Web designers emphasized that web design was a collaborative processes between clients and designers. Company managers were a part of the web design team. A new application was used only when it integrated into the design and they felt comfortable with using the concept. Some findings are summarized in Table 2.

Singaporean Designers	Australian Designers
-Use particular color scheme (depends on companies preference)	-No color preference from companies
-Company logo is important	-Company prestige is more important than image
-Not prefer any particular symbol	-Not prefer any particular symbol
-Prefer to put many animations	-Consider to use animations but not many
-Large and many numbers of pictures	-Not to put pictures, and prefer to put text-based information
-Customers are not main consideration	-Customer reactions are major influence on design

*Table 2: Web Designers' Preferences in Two Countries*

To consider the impact of individualism and collectivism, the collectivist characteristic was confirmed in Singaporean designers' considerations when they choose to set up a website because they are under peer pressure to keep up to date. Most of the Singaporean designers believed they must satisfy their contacts' requirements disregarding the fact that building up trust relationship guarantees customer trust and business success. It includes the customer's culture in business transactions and reflects this negotiation process on the web. Singaporean designers also more carefully considered public and community sensitivities to avoid going against public interests. Individualist characteristic was confirmed in most of the Australian designers that their individuals' rights are reflected on web design in the form of representations of different concepts, which were intended to stand out.

In the case of web site maintenance and changes, designers were able to easily update public information if they thought it was appropriate, another reflection of individualism. Australian designers applied more individual opinions, and were less sensitive to the use of graphic images on web sites compared to Singaporean designers. Besides the above case study, we examined ten selected IT global sites based in USA. Apparently there were no different web design features for different countries in international Electronic Business. Most of international e-commerce sites from an additional investigation concluded that sites use similar image design for international users as for home-based users. This indicates that international market providers (mainly USA based) use the same pattern of colors, symbols, and images on the web in different countries.

## 5. Discussion

The study result demonstrates that designers from different countries have different approaches, and provide different web features. Visual-information is an important source of communication between business providers and customers on the web. Designers and developers must be aware of their customers in different countries. Currently there are many different approaches to dealing with cultural issues, as applied to supporting customer goals using the e-commerce site; two dominant approaches are discussed below.

### 5.1 Understanding Customers and Culture

Cultural aspects' impact on globalization of web design in web-based E-Commerce is essential. Web developers need to consider that the users are located in different geographical locations and belong to different culture backgrounds. The significance of web design is usually directed to the management while leaving the user out of consideration, unless specific problems arise and are addressed. Turk and Trees [7] mentioned that global Information Systems on the web should be developed in such way as

to localize information and design for different culture background users. Web applications could be adopted for local users rather than be internationalized to produce a cultural relevant user interface. Information presentation on the web needs to be considered in localized web design context with globalised information.

### *5.2 Relationship*

The result indicates that designers and company managers are also from different culture backgrounds in terms of belonging to sub-cultures, and may have different goals to provide information presentation on the web. Their relationship is critical to provide the right information presentation to customers at the right time. Web design in approach should be a collaborative process, where establishment of a working relationship between companies and web designers is a major starting point in the design process. This promotes a common perspective to information presentation for the customers and further if target customer's cultural dimension is taken into consideration then it is likely to promote business objectives of trust and effective information delivery.

## **6. Conclusion**

The case studies described indicate that although the cultural background of customers and designers is very important for web design, current design practice takes minor account of cultural issues. Many global business web sites have been designed and developed with absence of understanding of customers and their cultural differences on the global scale. Customers' expectations are not taken into consideration in designing the functionality of web sites in global business companies. Apparently Australian web designers are more customer-oriented in web design, in comparison to general global business web designers though they appear to be less sensitive to the use of graphics on the web. The web sites of leading Information Technology companies studied in this research did not have their interface to account for different user cultures. This research found that designers' approach from the two different countries were dissimilar for web design in electronic business applications. This study also concluded that there is a need for localized web interface design to transmit the meaning of a business concept on web sites in various locations.

In addition, there is increasing attention to investigate ways to develop e-commerce sites for different countries. Future Electronic Business technologies will definitely introduce more attractive and convenient tools for the customers from different countries. Moreover, web image components are better suited to be used in certain ways to improve web-based e-commerce. Not surprisingly web images are being used a lot to attract customers and increase company's presence in the global e-commerce.

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