

# *Global E-commerce Design for International Customers*

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## ***Abstract***

This paper addresses issues design of global B2C e-commerce for international customers. The paper focus on the web design of e-commerce sites for companies engaged in global e-commerce. Over twenty global company sites were investigated and a comparative feature analysis was performed. The study was focused on discovering global e-commerce sites which may have targeted specific national or regional customers using specific design features. In the paper, a framework for evaluating characteristics of web design is presented in the main section which leads to identification of design features that will help improve global B2C e-commerce services for international customers.

***Keywords:*** *e-commerce, culture*

## **Introduction**

With the scope of businesses spreading globally, there are increasing numbers of global e-commerce sites that provide links to different country sites, however most of the sites are in English and not all sites provide languages other than English for web customers from different countries. It was found in earlier studies, that the presentation of information through different languages and web design elements such as navigation, images and color can provide diverse reactions from people in different cultures (Kang and Corbitt, 2002, Fernandes, 1995, Lerner, 1999). In e-commerce, target market is a demographic group which may or may not be restricted to the national region. When international customers are targeted, features such as language, web design and information systems need to be designed for the international market (Sklar, 2000). Usually, presentation of business information and services offered through the web is not only conveyed with developers' ideas but are also possible with web customers' perception of choices. In short, information on the web relies on both groups forming a common perception. In a global context, most web interfaces do not support effective usage due to use of unsuitable tools for conveying information in a global context, 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.

Chen (2004) proposed an e-commerce model that contains different categories of retailers. One of the categories consists of retailers that replace their physical stores entirely with online operations (Chen et al., 2004) and so this area of research gains more relevance. This paper presents issues related to information presentation, web design, site structure and cultural aspects on the global site. Hence a particular business category of large global retailer sites, international airline companies, were selected and investigated. International airline companies are increasing their business operations on web sites, though they do not intend replacing their bricks and mortar facilities, web services provide a vehicle for improving their customer services and increase convenience for their customers. Benefits for the business are manifold, web based services can significantly cut operating costs, expand market by promoting global exposure, increase customer services, and overall deliver better product value. By examining different global airline sites, the researchers hoped to find answers to research questions such as “what are design characteristics and popular design features in Western and Eastern country web sites?”

### Design and Information Presentation

The categories of design features that were investigated in this research are site links, page structure, menu frame, images and color, text density, high-tech features, and content. The categories and their characteristics are based on existing web design guidelines from several sources, and summarized in see table 1 (Nielsen, 2000; Sklar, 2000; Norman, 2004; Horton, 2006).

**Table1: Categories of design feature**

	Categories	Details
<b>Design feature</b>	Page structure	Linear, hierarchical, network or multiple access links to product info
	Menu frame	Horizontal, vertical, or both
	Image	Image map, cartoon, moving or stationary, country logo, or picture with person/people
	Density of text	Low, medium or large on the home page
	High tech feature	Number, size, location
	Content	News, search or links for promotion
	Form	Search engine, booking from
	Global Links	Country, language options,
<b>Information presentation</b>	Style of presentation	Introduction, tailored information in different countries

These issues were investigated through different country sites in two different culture groups. The purpose of this investigation was to find the design characteristics and information presentation styles that are distinct to a culture. An exploratory approach was taken to examine multi-linguistic sites. This enabled understanding of typical design styles in different language sites.

### **E-commerce and culture**

The user population in e-commerce is growing continuously. Recent statistics illustrate that B2C e-commerce market alone is expected to have over billions of users (customers) in 2008 (Internetworldstats, 2008). Statistics on the estimated world population based on language shows that only around 2 million people speak English, and around 4 billion people speak other languages and also use the Internet (Internetworldstats, 2008). This figure may increase significantly over the next few years as an indicator for the use of e-commerce. E-commerce markets are facing an increasingly competitive environment which can create problems for businesses that are unable to compete successfully in a global business environment. A crucial aspect of growth for e-commerce businesses is attracting more customers to purchase goods and services offered and this enables achievement of greater profits from e-commerce sites. Therefore e-commerce technology needs to support this rapid growth in customers and facilitate business transactions to take advantage of this growth. Lerner (1999) suggested localization web sites into six languages other than English, namely, Japanese, German, Spanish, Portuguese and Swedish, e-commerce to cover up to 90% of the online population (Lerner, 1999). The argument for localized information with local languages is that it is likely to increase transactions in e-commerce business. Hence it is important to conceive what constitutes the quality of site for different country customers as well as for e-commerce providers.

E-commerce site structure is the organization of information on a site. Site structure is the groundwork of design, navigation and organization of documents at a site (Smart et al., 2000). Sometimes attractive design features such as animations, video clips, or graphics may attract web customer's attention, but the static information on the web can provide ease of navigation to the customers (Gloucester, 2002, Nielsen, 2000, Norman, 2004, Raskin, 2000). A combination of these features result in an effective good quality website. Aspects of web interface usability need to be considered at the design stage to make content easy to understand for global web customers.

### **Study Approach**

As Yin (1994) suggested, evidence of case studies may come from six sources such as documents, archival records, interviews, direct observation, participant observation and physical artifacts (Yin, 1994). In this study, observations and documents were used in process of conducting the case study. Firstly, the researchers focused on design features and information presentation differences in large global corporation web sites. Understanding how color, image presentations and facilities for data entry in different sites, and how the page included different regions. The researchers also considered complexity of a page including text density, site structure, frame and global links. This

approach sought to confirm the generalizations and to test the impact of cultural differences on web design. This exploratory investigation attempted to formulate more precise objectives for further research.

Firstly, we selected airline sites, and identified information web design styles; page layout, visual design elements and language options. Secondary, this research was conducted on pre-selected global sites, which are based in Australian, UK, Korea and Japan. The research questions were “what are design characteristics in different country web sites?” and “what are popular design features in West and East country sites?”. The study attempted to find out the characteristics of design features. For the second research question, observations were conducted to determine the different design categories in four different countries. Also we investigated design features, where some design effects were taking into consideration, such as color, images, menu layout, etc. Both, culture differences and design features. The data collection and research methods are similar to many studies, where exploratory research method was used to examine about the web design sites (Huberman, 1994, Jarvenpaa et al., 1999). This approach was found to be beneficial to confirm generalizations made in relation to test the impact of cultural differences on web design. This research then attempted to formulate more precisely objectives for further research.

## **Results and Analysis**

In this section, results are presented on general views from over 23 airline sites on design. Results relate to the design categories of colors, image, text density, high-tech features, particular features and common features from four different countries.

Most of airline sites (20 out of 23) provided same page designs for different countries as the main home page. Some of the sites had same design with different color and pictures for different countries, but theme color and image were same. Though, some Asian country's sites did not follow this norm. Asian sites generally had more moving images and bigger pictures than Western country's sites. Sixty one percent of the airline sites investigated provided connections to global sites through links. Furthermore, 9 sites had different design features than home sites. 8 airline sites had different design pages for different countries compared to the home site. Rest of the sites presented cover pages with different photos or menu frames compared to the main home site, with the same information contents as the main home page. Most of airline sites presented the same type of cover pages with links to other languages/ countries as the main home site. 13 sites provided different menu frame and colors on local pages. Twenty six percent of sites had multiple access links to product information. Overall images were not a major feature of the site and mainly contained stationary images. Most of sites contained more than three images per page. Cartoons and moving images were not popular, and only one airline site had some cartoon images on the site. They also had the company logo with just one exception, and were mainly located on the top-left corner of the cover page. Some of the sites had more prominent use of images such as on Asian country sites, where images of people and big welcome signs were used to promote friendliness. The prominent color on airline sites was found to be ‘blue’ images on a ‘white’ background.

The text density was also found not to be very high with 'black' text delivering information mainly through the functional form and menus. Generally, each site contained between three to five different colors for each site including text and images.

Overall hierarchical structure was most the popular information presentation structure. Twenty one out of twenty three sites provided a hierarchical structure. Generally, a flat hierarchy of information is important for a successful web site design (Horton, 2006, Shneiderman, 2000, Sklar, 2000). Hierarchical presentation of information facilitates the customer to understand information on each page easily. The customer can also control navigation easily and recognize selection points readily. Most of the sites investigated provided information at the top and second levels in the hierarchic information format for a selected product group and brought up to the index or a text box for the search engine. The horizontal layout was observed on 19 out of 23 sites, and 4 sites were found to be with the vertical layout. Over 16 sites had top-down and left to right arrangement for the menu layout. Unlike other popular e-commerce sites, none of airline sites investigated used pop up windows; 8 sites contained rollover features, and 11 sites had moving images

Out of the 23 airline sites examined, 19 sites provided English sites only, and they focused on English speaking customers mainly based in the USA including 7 airlines from USA. For providing global links and sites for customers from other countries, almost all airline companies provided links to other country or regional sites, and only one company provided local sites for each country separately. Fourteen out of twenty three global sites provided links to multilingual sites or other country sites from the main page. Though web customers including designers use their own language for day to day business activities, most of the airline sites presented information in English on the cover page, except sites in Dutch, Japanese and Chinese languages. These country sites focused only on local customers rather than other country customers. Apparently, 14 out of 23 sites provided links for different country customers, but not all airline sites provided local language sites for different country customers.

Most of airline sites required the customer login to access service features. The login form was located on the top for the cover page for 8 sites and bottom of the cover page for 3 sites. All airline sites provided multiple text boxes and drop-down selections for the booking forms. These were located in the middle of the page for 39% of the sites, on the right side of the page on 2 sites and on the left side of the page on 3 sites.

Out of 23 sites, 14 sites provided global options, and only 4 sites offered links to other language options. This means that majority of the airline companies prefer to have home sites in English rather than local languages in different country site.

## **Comparison**

With these results in mind, a detailed study was conducted for four country sites; that of Australia, UK, Korea and Japan for each airline. No cartoon and/or moving images were found in these sites. There are many design features that are different from each country

site for the same airline company such as image links, overlapped images, number of people in the picture, dominant page/text color and high tech features. Overall, table 2 shows the categories of design clustered in three selected groups.

**Table 2: Characteristics of design feature in Western and Eastern country pages**

Categories	Airline Home page	Country pages directed for Korean/ Japan	Country pages directed for Australia /UK
Image	Image links are popular but no cartoon images.	Business organisation logo and images are large. Mostly, the human and female faces on the picture. Many images with links	Smaller images are popular
Colour	Dominant colour is blue in text and image. More than three colours of text	Multiple coloured images, text and backgrounds	Use limited numbers of colour for text and images
Density of text	Mainly with text information on the page	Less text than the home page	Less text than the home page
High tech feature	More rollover features and search tools available than other country sites	Pop up windows and rollover features are popular. The animations are larger and located in the middle or top. The animations are mainly for other businesses' advertisements	Moving images and animations are uncommon, and usually located on the right corner and small
Particular feature	High density text on the page	The black text colour is common	The animation is small and own business organisation's advertisement
Common feature	Business organisation logo was the strongest image on the cover page. Overall, blue colour was commonly used. Multiple frames are in vogue.		

Most of the airline home sites provided more search tools and links. Korean/Japanese sites provided more than two languages including English and their own language. Most of the Korean/Japanese sites provided alternative designs for local customers. However Australian/UK site rarely provided different features (e.g. menu bar, links, etc), other

those on their home site. From these observations, use of text, images, color and new high tech features in design for Korean/Japan and Australian/UK were found to be different. Australian/UK customers were considered as equal to English site customers on their home site. Some Korean/Japanese sites provided different design for English and non-English customers, and provided different favorites for different language background customers.

From the study, the Australian sites were found to be identical to a typical Western global site in comparison to Korea/Japan and Home sites. The Western sites usually have an introduction page which provides information about the company and their market and the product information is accessed through links. In comparison Korea/Japan sites provide no introduction and take the customer directly to links for the selection of services and products. By looking at different design features, there was a clear connection between design features and pages aimed at or originating from certain cultures. Further investigations are necessary in this aspect of web design.

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From the study, the Australian sites are more likely to be identical to a Western site in comparison to Korea/Japan and Home sites. The Western sites have an introduction page which provides information about the company and their market and the product information is accessed through links, in comparison to Korea/Japan sites, which provide no introduction and take the customer directly to links for the selection of services and products. By looking at different design features, there was a clear connection between design features and pages aimed at or originating from certain cultures. Further investigation is necessary and will be performed in future studies.

### **Conclusion and limitations of the study**

From the study results, there are certain ways to present information on Western and Eastern countries web sites. These suggestions are to plan ahead as all languages are not created equal and have their own nuances, to be aware of cultural differences, present a clear choice, know the target customers, avoid slang, and keep information current on the site. However not many airline sites seemed to be aware of how cultural difference impact on local customers' preferences. Even though a global site provided links to another country site, the site was in English and only three sites provided languages other than English for different country customers.

This paper presented a framework to evaluate characteristics of web design in the main section, and identified some design features that will help improve ease of use and satisfaction for international customers. It was observed in the study that global airline sites mainly focused on English web customers rather than on other language customers. The limitations of this research are that it did not go through with usability evaluations, usage of software, quality assurance testing and post-analysis, however further investigations are necessary and will be performed in future studies.

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