Effective User Interface Design for Online Stores in the Asia Pacific Region: A Survey Study

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Abstract

One of the potential barriers for global online stores could be the differences in regional customers' preferences of Web pages. Because the Web page of an online store is the store front where the customers actually interact with the online company, it is important to design the Web page based on the online shoppers' preferences to improve their perceived satisfaction. Therefore, this study investigates the features that possibly influence the perceived satisfaction of online retail shopping among young generations in Korea using 27 questionnaire items. The study findings imply that online retailers may need to emphasize on an easy and guaranteed return and a reliable order processing system.

Keywords: User interface design, online store, customer relations management

Introduction

Customizing Web pages for regional customers may be necessary in the near future because the number of online customers outside of the United States is growing very rapidly in cyberspace. For example, based on the Jupiter Research analysts (2001), the Asia Pacific region will outpace the US less then five years and expects it to contain as much as one-third of all Internet consumers worldwide in 2005. Even though only a quarter of the global Internet population will reside in United States by 2005, only one-third of American online businesses are targeting global markets according to the Jupiter Research, the worldwide authority on Internet commerce. Jupiter Research advised online stores to align with local companies in each global operation market to gain a better understanding of local customers' preferences, local customs and business practices, brands and fulfillment. Some online stores already expand internationally through alliance with local companies. For example, most of the global expansion of Amazon.com has been through the alliances with local companies (Bezos 2000). In that regard, this study investigates the features that possibly influence the perceived satisfaction of online retail shopping among university students in Korea that has one of the fastest Internet population growth rates in Asia.

Current Trend of Business to Consumer E-Commerce

Because online shopping is based on an electronic transaction, it is commonly believed that online shopping can give shoppers much convenience, saving time with flexibility in shopping hours and allowing more choices of items in general. Online stores have devoted themselves to providing convenience, lowest prices, and better service, as well as merchandise availability to meet customers' demands rapidly because of the high expectations of online customers toward B2C E-Commerce. In addition, many online stores have spent huge amount of their budget for advertising their Web sites to attract potential buyers. Due to this fierce price competition as well as the combination of weak financials and investors' flight, Forrester Research Inc (Forrester 2000) predicted that most dot-com business to consumer retailers would be out of business by 2001. We already witnessed the turmoil among online companies during the last year. For example, seventeen online retailers advertised on the Super Bowl XXXIV in 2000 while only three online stores (E-Trade.com, HotJobs.com, Monster.com) advertised on the Super Bowl in 2001.

In addition, privacy and Internet security issues have emerged as serious concerns among online shoppers. In previous studies, perceptions of unsatisfactory security on the Internet are one of the primary reasons hindering online purchasing (Zellweger 1997;

Hoffman, Novak and Peralta 1999). Privacy is one the major concerns among online shoppers recently (Hoffman, Novak and Peralta 1999). In the last few years most of us often heard of Internet security problems. A couple of the most famous incidents include a love bug, Melisa virus, and the denial-of-service (DDOS) attacks. The DDOS attacks victimized the well-known Web sites such as eBay Inc., Buy.com Inc., and other companies with an overwhelming flood of network traffic in February, 2000. Even though this much awareness of Internet security amongst us, it was found that nearly 600 of the world's largest companies are still vulnerable to one of the most serious Internet security flaws yet discovered according to the survey conducted by Men and Mice, an Iceland-based security software company (Formski and Heavens 2001). Many claimed that most security breaches are due to the lack of timely updates of security patches by the network administrators.

In this turbulent period of B2C E-Commerce, online stores need to endeavor to enhance the customers' satisfaction to maintain positive relationships with customers. Jones and Sasser claim that it is very important to make customers fully satisfied in terms product or service, basic support, recovery of bad experience, and extra ordinary service because the fully satisfied customers have a higher chance of purchasing merchandise from the same store in general (Jones and Sasser 1995). A user interface that is tailored to the regional customers' preferences is one important attribute to make those customers satisfied.

Questionnaire Development

Even though online retail stores use the Internet and the WWW as a transaction medium, it is commonly believed that there are many similar characteristics between online retail stores and physical retail stores (Loshe and Spiller 1998a). Linquist (1974-75) compiled the findings of the previous studies and grouped the store components into four categories such as merchandise, service, promotion, and convenience. These four categories were extended into six categories including merchandise, service, promotion, convenience, fast checkout, and ease of navigation through the store (Arnold, Ma and Tigert 1977). Based on these study findings, Spiller and Loshe (1997-98) categorized the sample of 137 online retail stores into five distinct web interface categories: superstores, promotional stores, plain sales stores, one-page store, and product listings. In addition, they suggested that their list of features and attributes could be used as a checklist for online store designs. These same features were used to measure the variances of store traffic and sales in another study (Loshe and Spiller 1998b). For example, these authors found that the number of products in a store explained 17% of all variances of store traffic, but had no effect on sales.

Loshe and Spiller (1998a) described attribute that possibly influence store traffic and sales for the six categories described. They surveyed the interface design for several online retail stores to explain the positive and negative aspects of features an online retail store should have to attract more customers and generate sales. Their study concluded that that the growth of the Internet retail sales would depend, at least partially, on these interface design issues (Loshe and Spiller 1998a).

As discussed in the previous section, it is important to include the security and privacy issues in designing an online store interface as well as the currency of information. Currency of information on a Web page means that shoppers want to see the most recent information on the Web page as possible. The online companies should emphasize on providing a consumer oriented information privacy model to improve the commercially valuable relationship with customers (Wang, Lee and Wang 1998). Swaminathan, Lepkowska-White, and Rao (1999) tested the hypotheses of security and privacy on the online shopping using the GUV (Georgia Visualization and Usability Center) survey data (GUV 1998). Their findings were that consumers seemed to be more concerned about some aspects of information privacy than the security of electronic exchanges.

Based on the studies mentioned above, the authors developed questionnaire items using features similar to those used in previous studies as a checklist for online store designers. The authors added a few additional items that might be necessary in enhancing the perceived satisfaction of online shopping customers such as the issues of security, the privacy, and currency of information. As a result, the authors generated 27 questionnaire items to measure the perceived satisfaction of online retail store shopping.

Data Collection and Research Methodology

The survey instrument was administered to 123 undergraduate students in a university in South Korea. Most of them are full time students and some of them have jobs (part time or full time). Even though most of the students participated in this survey during class time, the participation was voluntary.

The raw matrix of 123 responses was analyzed by the principal components analysis with the latent root criterion (eigenvalue 1 criterion) applied to obtain the initial solution of four factors (factor loadings greater than .40). In principal components analysis, only those factors with eigenvalues (the column sum of squares for a factor) greater than 1 are interpreted as significant. Based on this initial analysis, several more trial rotations are performed to find the factors by considering the initial criterion and factor

structure that best represents the underlying relationship of the variables. The Varimax rotation method with Kaiser normalization was utilized to extract factors. Kaiser's Varimax method (Kaiser 1958) maximizes the sum of variances of squared loadings in the columns of the factor matrix. It is one of the most widely used methods to obtain an orthogonal rotation. As a result, four factors are extracted that count for 66.24 percent of the total variance of the data set.

Analysis of Results

Table 1 presents the results of the four-factor solution that are extracted from the correlation matrix using principal components analysis. These four factors capture a great share of the variance in the data explaining 66.24 percent of total variance.

Table 1. Rotated Component Matrix

	Component			
	Factor 1	Factor 2	Factor 3	Factor 4
Q13	.833			
Q12	.813			
Q5	.803		.346	
Q6	.799			
Q22	.766	.308		
Q15	.755			
Q9	.747	.337		
Q27	.747			
Q8	.746			
Q10	.740			
Q26	.730	.384		
Q7	.697			
Q21	.678	.342		
Q14	.655	.369		
Q16	.652			
Q25	.624	.398		
Q20	.547	.437		
Q4	.508			
Q23	.488	.479		
Q18		.774		
Q17		.742		
Q19	.403	.674		
Q24	.525	.589		
Q2			.865	
Q1	.311		.786	
Q3	.480		.545	
Q11				.899

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization
Rotation converged in 9 iterations

As shown in the Table 1, eighteen variables load particularly high on the first factor that explains 38.37 percent of the total variance. This factor is referred to as "credibility and trust on vendors." This factor includes the features regarding the reliability of the purchasing process, offering dependable products, and the vendor service. The reliable purchasing process includes the features of a clear and easy return policy, verifiable accurate order status and guaranteed delivery, clearly specified shipping and handling cost, prompt confirmation E-mail, selective cancellation of purchased items, and secured transaction mechanisms (e.g., a secured Web page). Offering the dependable products include the attributes of product warranty and guarantee, product use and care information, and competitive price. Vendor service includes new product offerings, easy to find contact information, frequently asked questions (FAQs), other customers' testimonials, and currency of information on the Web page.

The second factor, "convenience of shopping," explains 13.73 percent of total variance. It includes five variables such as flexible shopping hours, effective and efficient search functions, flatter hierarchy of Web page structure, and easy navigation on online store and product promotions. The third factor is named "tangibility and variety of merchandise" that explains 9.74 percent of total variance. It includes proper size picture of merchandise, good quality picture of merchandise, and a broad product variety. Because customers cannot touch or try on any of the merchandise on the Web, they often heavily depend on good quality pictures of products to evaluate them. The last factor is "information about an online company" that explains 4.4 percent of total variance. Because there is no physical contact in cyberspace, online shoppers believe they need to know whom they are dealing with. Providing company information seems to be getting more important as the number of online stores increase.

Among these four components, there exists very little covariance. Therefore, it may be concluded that these four components represent different dimensions to improve customer satisfaction of online shopping among the young generation (university students) in Korea. It does not mean that these four components are the only factors influencing online shopping satisfaction. There could be additional components because these four components together explain 66.24 percent of total variance.

Implication of the Result

As discussed in the previous section, the clear and easy return policy is a variable that highly correlates to many attributes of credibility of a vendor. It implies that the respondents believe that a reliable vendor will offer a clear and easy return policy to its customers to minimize the risk of delivering wrong items. The importance of easy return or refund may be related to the old trading customs in Korea such as the sale is the final in general. It is relatively a recent practice to accept a hassle free return or refund among retailers in Korea. Thus, it may imply that if any company offers a guaranteed hassle free return and refund policy and followed that policy as it is, it will contribute much to improve online shoppers' satisfaction in Korea.

Online shoppers want to have accurate information of merchandise availability, anticipated delivery date, and confirmation E-mail for a specific order. Especially, in a country where the package tracking system of a carrier is not as effective and efficient as the US, it is more important to provide accurate information on order delivery status including the anticipated delivery date. It will certainly help shoppers alleviate the anxiety related to delivery problems. Thus, these attributes, easy return policy and guaranteed delivery, may contribute significantly to improve the vendor credibility as well as the customer satisfaction in cyber space.

It is true that some vendors do not provide the contact information such as e-mail or phone numbers in easy to find location on their Web page probably due to the simple ignorance or an operating cost reduction purpose. Some online vendors mentioned that the toll charge has mounted rapidly when they provided the phone number on their Web page (MCCCC 1999). Whatever the reason may be it will negatively impact vendor's credibility if the contact information is omitted (especially phone numbers).

Online shoppers want to have a secure transaction mechanism for protecting private or financial information to improve their satisfaction. It is true that some countries do not have rigid laws or regulations to protect the online customer's private information or financial information as the US does. Even though Koreans live in a homogenous and group-oriented society where the privacy is not so well protected in everyday life as in the US, they want to have a well-established mechanism to protect their privacy and financial information on cyberspace.

It is often mentioned that providing timely information on a Web site is very important. Through this survey, it is suggested to provide the most recent information regarding secure transaction mechanisms, warranties or guarantees of products, policy on privacy issues, prompt confirmation E-mail, anticipated delivery date, out-of-stock items, online store design change, return and refund policy, shipping and handling cost, other customers' opinions or testimonials, order processing mechanisms and others. Often, some vendors either do not update the information on time or do not provide some of the information at all on their Web site. Not having the necessary information on time may downgrade the credibility of a vendor significantly.

Conclusion

As more Internet users reside outside of the US, the gap in global Web development will ignite a fierce battle for leadership in the international Internet development. To accomplish this goal, one of the first steps is to recognize what local customers want to have from your Web site. This study is worth describing the factors influencing the effective Web page design to improve online shopping satisfaction among the young generation in Korea.

Due to the increasing number of online stores, online shoppers consider credibility and trust of online vendors as one of the biggest dimension to explain the total variances in online shopping satisfaction. For improving the vendor's credibility, they consider the easy and guaranteed return policy and a reliable order processing system as the most significant attributes. In addition, other factors influencing their shopping satisfaction are convenience of shopping, tangibility and variety of merchandise, and information about the online company. The findings are different from the previous studies on American customers conducted by Jarvenpaa and Todd (1996-97). The differences in the study findings are expected due to the different groups of online shoppers in different regions.

Online shoppers in Korea responded the easy and guaranteed return as one of the biggest contributing attributes to explain the variances of their satisfaction towards an online store. It may be explained through examining the business environment in Korea where the return and refund have not been so commonly accepted practice until recently. Related to this issue, they want to have accurate order and delivery status promptly to improve the satisfaction as well as a vendor's credibility. The secure transaction mechanism is also one important aspect to improve a vendor's trustworthiness even in Korea where the privacy is not so strongly protected as in the US. The results of this survey results suggest the customers want to have a strong protection of their financial or personal information when they are in cyberspace.

One additional important aspect is that the vendors should follow the policies on the Web page as much as possible to improve online shoppers' satisfaction. The clearly specified policies or explanations will perhaps make customers more satisfied and trust more if a vendor follows them as they are.

This study provides a snapshot of online shopping satisfaction among college students in Korea today. Due to the limited scope of sample domain and size, it may not be clear if we can generalize the results of this study to the general public in the Asia Pacific. However the study findings provide very valuable information to the vendors whose target customers are young generations in the Asia Pacific region. To generalize the findings of this study, it is suggested to conduct a wider range survey on the general public (multi-national, multi-generations) to investigate the common factors influencing online shopping satisfaction in the Asia Pacific region.

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