Winery Websites: Effectiveness Explored

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Abstract

It is expected, in today's business environment, that a web presence is required. The effectiveness of that web presence has direct impact on the bottom line of the operation. Wineries are very competitive for tourist and consumer dollars, so website functionality becomes an important part of the industry's marketing mix. Using previous studies in the information systems field, this study begins to address how the wine industry presents itself on the web. With most wineries being small, independent operations, there seems to be vast differences between their functionality, and this research hopes to contribute to the future success of small wineries in the United States.

Introduction

In today's technology-driven world, the Internet has become a necessary tool for businesses in virtually all industries. Even if a business does not sell its products or services online, it is expected to have an online presence. Organizations are expected to provide value to their customers by having attractive and effective web sites. These websites have become a means for communicating and exchanging information, as well as for increasing sales and building brand loyalty for businesses. More importantly, the Internet offers convenience to the consumers, whether it is for obtaining information or making purchases.

The wine industry can particularly benefit from the growing popularity of the Internet among consumers. Consumer preference for the online sales channel is driving wineries worldwide to embrace electronic commerce (e-commerce). Growing online capacities enable wineries to market their products and the total wine tourism experience more effectively (Yuan, Morrison, Linton, Feng, & Jeon, 2004). In 2006, it was reported that Internet sale grew by 40% to $135 million and U.S. consumer-direct wine sale is projected to reach $5.4 billion by 2011 (Carroll, 2006). However, wineries, especially small and mid-sized properties, do not rely heavily on revenue from their online ventures. Nevertheless, a website is still a primary tool for wineries to communicate to consumers, trade, and media. Wineries are also using websites as part of their marketing strategy.

An increasing number of wineries worldwide now have websites, thus allowing their customers to either purchase products directly, or gain information about the winery offerings. A website must reflect a winery's image and must contain relevant information about the winery as it often represents the only contact the winery will have with its consumers. Thus, if a winery wants to achieve a competitive advantage through its online presence, effective website design is needed to maintain or increase a winery's market share given the increasing number of available winery websites. However, the reality is that while most wineries do have websites, an expert evaluation shows that few are designed for optimal return (Ness, 2006).

The debate about the features that need to be included in the wineries website has been discussed in the wine marketing literature (Ness, 2006; Winters, 1997; Yuan et. al, 2004). The general agreement among the researchers and industry specialists is that first and foremost, winery websites need to be visitor effective, that is, to have visitors' interests in mind in the design process. Specifically, some essential features have been suggested: the winery (a history, profiles of the winemakers, stories about wineries), the wine (tasting notes, awards, educational information, etc.), tasting room information (tourist maps, calendar of events, etc.), sign up information (guest book, discussion groups, surveys), and contact information.

Purpose of the Study

This exploratory study was designed to address a research gap in understanding of winery websites and its results should benefit both wine producers and those involved in wine tourism. The primary objectives of this research were to: (1) develop Website evaluation criteria and an instrument to measure the effectiveness of winery Websites from multiple perspectives; and (2) test the reliability of the instrument based upon 400 wineries located in across the US.

Literature Review

Economics

There have been several papers that have examined the ways in which the Internet economy has changed the ways in which consumers and firms behave, both in terms of value added to the economy and in savings seen by firms. Barua, Pinnell, Shutter, and Whinston (1999) is an early examination of the fundamental differences between business conducted by purely electronic means versus traditional, physical means, and is also an early attempt at quantifying these differences in terms of contribution to gross domestic product. They note that the Internet economy is fundamentally different from the physical economy in several ways, most notably in terms of information exchange, speed, and understanding customers' willingness to pay. They also note that the Internet economy relies on a fundamentally different infrastructure from their physical counterparts, an infrastructure based on Internet protocol, security products, e-commerce applications, and electronic intermediaries such as E-bay. They argue that this infrastructure is not only changing how consumers purchase online, but is bringing changes in the physical world as well and that these changes are becoming more important and valuable. Most importantly, they make one of the early attempts to calculate the impact of Internet commerce in each area of the virtual market. They find that the Internet-based economy contributed around $301,393,000 in 1998 and created an estimated 1,203,799 jobs in the United

States in the same time frame. The authors also noted that the growth rate in both of these measures was expected to grow at ever increasing rates.

Madden and Grant (2002) provides an excellent overview of how the infrastructure development discussed in Barua *et al.*(1999) influenced Australian commerce and policy regarding said commerce. They examine how increased Internet expansion in Australia has led to firms becoming more vertically integrated and increasingly able to make use of economies of scale benefits. These pursuits have served to lessen the effects of former national monopolies. These combined effects have led to significant decreases in the price of Internet technology not only for consumers, but for firms as well.

Litan and Rivlin (2001) and Borenstein and Saloner (2001) also examine the ways in which the Internet economy has changed the behavior, efficiency, and cost structure of firms. Both articles point to the huge potential of Internet commerce in decreasing firms' costs and increasing efficiency through ease of information sharing. Borenstein and Saloner (2001) note that not only will costs decrease due to increased efficiency and decreased transaction costs, but that Internet commerce will decrease the amount of handling costs, theft, and rent while increasing the ease in matching consumers with products. Litan and Rivlin (2001) go further and attempt to measure the cost savings of conducting business online through the networking of computers (essentially transaction costs and efficiency gains). Examining eight sectors of the economy ranging from health care to government spending and in all accounting for 70% of gross domestic product on a value added basis, they find that increases in efficiency and decreases in transaction costs have yielded between a $100 - $230 billion yearly savings, or around 1 -2 percent of the value of the economy at that time, and that this savings was expected to persist over time. Thus, it is imperative that wineries take advantage of the benefits of the Internet economy.

Website Design

Given the growth in the number of winery websites, effective website designs are necessary to maintain or increase a winery's market share. The debate about the features that need to be included in the winery website has been discussed in the wine marketing literature (e.g., Ness, 2006; Winters, 1997; Yuan et al., 2004). The general agreement among researchers and industry specialists is that first and foremost, winery websites need to be "visitor effective", that is, to have visitors' interests in mind in the design process. Specifically, suggested essential website features include the winery (a history, profiles of the winemakers, stories about the winery, etc.), the wine (tasting notes, awards, educational information, etc.), tasting room information (tourist maps, calendar of events, etc.), sign up information (guest book, discussion groups, surveys, etc.), and contact information. However, little research has been conducted to provide clear guidance for the selection of various features within the context of the winery websites.

In the domain of human-computer interaction, a comprehensive list of website features has been suggested in an attempt to help organizations in designing effective websites that will draw consumers to them. We draw from this body of literature to provide an overview of various features that can be applied to winery websites. More specifically, we use the categorization proposed by Kim and colleagues (2002) for organizing various website features. Drawing from the architecture literature, they proposed three macro-categories of features that can be used to

evaluate websites. These macro-categories include functional convenience, representational delight, and structural firmness.

Functional convenience refers to the availability of convenient features for the processing of transactions (Kim et al., 2002). Website features within this category are also essential in the interaction with the website. These include the navigability and information gathering. Navigability is the extent to which navigating a website is perceived to be free of effort (Salisbury, Pearson, Pearson, & Miller, 2001) and has been found to be crucial in determining which websites individuals normally visit (Nielsen, 2000), and which ones they commit to (Bauer, Grether, & Leach, 2002). Conversely, information gathering refers to the availability of information about the company and product/service that is of high quality, relevant, and accurate to the consumer (Palmer, 2002). Such information should be presented in the simplest way, whenever applicable so that the consumer can easily understand the information presented.

Representational delight refers to the aspects of the website with which an individual visiting the website comes into contact (Kim et al., 2002). It includes both what an individual sees and hears when interacting with a website. This macro-construct includes such features as visual appeal and pleasant interface. These features relate to the presence of visual elements, such as colors, which enhance the overall look of a website (Van der Heijden, Verhagen, & Creemers, 2003). The use of multimedia, such as animations or video streaming, also makes the website pleasant to the consumer. Visual appeal also plays an important role in the decision an individual makes to use a website, as it enhances the user's emotional experience while interacting with the website (Van der Heijden, Verhagen, & Creemers, 2003).

Structural firmness refers to the ability of the website as a system to overcome all expected and unexpected threats (Kim et al., 2002). It relates to the security and stability associated with the website. The features within this macro-construct include security perceptions and download delay. Security has been considered a priority for web users (Zhang & von Dran, 2001-2002), because they want to feel safe and secure when interacting with the website. Further, download delay is an important feature that reflects the quality of a website (Palmer, 2002). Nowadays, web users are more demanding and are unwilling to wait for more than a few seconds for a response from a website (Schneiderman, 1998). Nevertheless, the features within structural firmness determine which websites individuals return to and which sites they make purchases on.

The use of these macro-categories, instead of individual features, is appealing for two reasons. First, they are parsimonious, making it easy to compare and contrast how individuals perceive these features across different websites. Second, they are comprehensive and inclusive, making it easy to map specific features to these respective macro-categories.

Methodology

An instrument using various construct to capture these macro-categories of website features was used for to evaluate 400 websites in the United States during a one week period. Multiple panelists were employed and these panelists were graduate MBA students. A diverse and randomized group of US wineries was utilized as the sample. These wineries were selected from the 2009 Wine Business monthly list of top US wine companies (WBN, 2009).

Instead of using individual website features, proxies within each macro-category of features were used. Existing, validated measures were used for each proxy. More specifically, for functional convenience, information gathering (Kim et al., 2002) and navigability (Salisbury et al., 2001) were used as proxies. Conversely, for representational delight, the proxies were pleasant interface (Kim et al., 2002) and visual appeal (Loiacono, Watson, & Goodhue, 2002). Finally, download delay (Loiacono, Watson, & Goodhue, 2002) and security perceptions (Cheung & Lee, 2000) were used as proxies for structural firmness. A 7-point Likert-type scale anchored by 1 (Strongly Disagree) and 7 (Strongly Agree) was used for each measures. A list of the items is provided in Table 1.

Table 1
List of Items

Construct		Items
STRUCTURAL FIRMNESS		
Download Delay (Loiacono, et al. 2003)	del1	When I use this website, there is very little time between my actions and the website's response.
	del2	The website loads quickly.
	del3	The website takes very little time to load.
Security Perceptions (Cheung and Lee 2000)	sec1	I am confident that the information I provide during my transaction will not reach inappropriate parties during storage in this retailer's databases.
	sec2	I believe inappropriate parties cannot deliberately observe the information I provide during my transaction with this web retailer during transmission.
	sec3	In my opinion, inappropriate parties will not collect and store the information I provide during my transaction with this web retailer.
	sec4	Overall, I have confidence in the security of my transaction with this web retailer.
FUNCTIONAL CONVENIENCE		
Information Gathering (Kim, et al., 2002)	inf1	This website provides various assortments of goods.
	inf2	Information related to the goods offered in this business is accurate.
	inf3	The latest information related to the goods is adequately provided.
	inf4	Information provided is easy to understand.
Navigability (Salisbury et al., 2001)	nav1	Navigating these web pages is easy for me.
	nav2	I find that my interaction with this website is clear and understandable.
	nav3	It is easy for me to become skillful at navigating the pages of this website.
	nav4	Overall, I find these pages easy to navigate.
REPRESENTATIONAL DELIGHT		
Pleasant Interface (Kim, et al., 2002)	int1	It is pleasant to follow the overall flow of the website.
	int2	It is pleasant to follow and use the menu structure.
	int3	The images and typographies used in the site are stylish.
	int4	The overall atmosphere and screen displays of the sites are well coordinated.
	int5	It is pleasant to see the provided information on each screen of this site.
	int6	Information provided in this website is consistent throughout.
Visual Appeal (Loiacono et al. 2002)	vap1	The website is visually pleasing.
	vap2	The website displays visually pleasing design.
	vap3	The website is visually appealing.

Factor Analysis

When using existing measures, the first step is to conduct a factor analysis to determine how observed items load on the different constructs. At the same time, the reliability of the constructs is reassessed. Thus, an exploratory factor analysis was conducted with varimax rotation. Items which had factor loadings above 0.5 were considered as acceptable (Nunnally & Bernstein, 1994). Two items (inf1 and sec4 in Table 1) were discarded after the first round as both of them had factor loadings of less than 0.5. Table 2 provides the factor loadings after these two items were removed.

Table 2
Factor Loadings

Rotated Factor Matrix					
	Factor				
	1	2	3	4	5
nav4	0.8715	0.2141	0.0289	0.0274	0.2623
nav3	0.8659	0.2125	0.0305	0.0139	0.2775
nav1	0.8344	0.1945	-0.0040	0.0103	0.3283
nav2	0.8306	0.2731	0.0061	-0.0719	0.2234
int1	0.7164	0.4265	0.0457	0.0323	0.0948
int2	0.6178	0.4815	0.0391	0.0705	0.0573
vap2	0.1392	0.8889	0.0413	-0.0120	0.0848
vap1	0.1211	0.8442	0.0279	-0.0069	0.1791
int3	0.1622	0.7833	0.0689	-0.0299	0.0098
int4	0.3578	0.7025	0.0056	-0.0105	0.0693
vap3	0.3318	0.6550	-0.0293	0.0993	0.1360
int5	0.4761	0.5974	-0.0108	-0.0110	0.1763
int6	0.4496	0.5480	0.0022	0.0707	0.2440
sec2	0.0403	0.0397	0.9973	0.0281	0.0161
sec3	0.0418	0.0352	0.9970	0.0208	0.0187
sec1	-0.0051	0.0223	0.9730	0.0316	-0.0182
del2	0.0200	0.0011	0.0209	0.9404	0.0388
del3	0.0194	0.0199	0.0053	0.9293	-0.0307
del1	-0.0001	0.0135	0.0417	0.7750	0.0144
inf3	0.2708	0.1693	-0.0727	0.0242	0.7411
inf4	0.5078	0.2233	0.0520	0.0184	0.6607
inf2	0.2647	0.1007	0.0515	-0.0093	0.6454

The factor analysis yielded five factors that accounted for 75.21% of the total variance of the data. The factor loadings ranged from 0.5480 to 0.9973. Factor I includes the four items from the navigability construct as well as first two items (int1 and int2 in Table 1) from the pleasant interface construct. While this is unexpected, it does make sense conceptually as both these items deal with how pleasant the interaction with the website and its structure was. Thus, we name this first factor as *ease of navigation*.

Factor II includes the three items from the visual appeal construct, as well as the remaining four items (int3, int4, int5, and int6 in Table 1) from the pleasant interface construct. Again, while

these results were unexpected, it is conceptually feasible as all these items deal with how visually appealing the website is. Interestingly, the items of the pleasant interface construct did not load together and the construct itself appears to be multidimensional, since few of the items loaded on the ease of navigation construct and the remaining ones on the second factor. Our results are quite different and we talk about why these results were observed in the conclusion section. We name the second factor as *website appearance*.

After the first round of factor analysis, the last item (sec4 in Table 1) was discarded as it has factor loadings of less than 0.5, and did not load on any of the five factors. The remaining three items loaded on Factor 3, and we name this third factor as *website security*. As expected, the items of the *download delay* construct loaded together. The first item (inf1 in Table 1) from information gathering was also discarded. The remaining three items of the information gathering construct loaded together. The last item was thus named *information availability*.

The Cronbach's α was used to examine the reliability of the five different constructs. The recommendation is that the Cronbach's α should be above 0.70 (Nunnally & Bernstein, 1994). The Cronbach's α coefficient for each construct is shown in Table 3. The resulting α coefficient for each construct was considered as acceptable. We therefore conclude that these constructs are unidimensional and reliable.

Table 3
Reliability Coefficients for Each Construct

		Number of items	α Coefficient
Ease of Navigation	NAV	6	0.945
Website Appearance	APP	7	0.914
Website Security	SEC	3	0.993
Download Delay	DEL	3	0.909
Information Availability	INF	3	0.815

ANOVA

An ANOVA was run to examine the differences in these five factors across the different winery websites. The results of the ANOVA are shown in Table 4. The results indicate that the factors are significantly different ($p < 0.05$) across the 400 winery websites considered in this study.

Table 4
ANOVA Results by Winery Website

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
NAV	Between Groups	162.416	190	0.855	4.415	0.000
	Within Groups	35.042	181	0.194		
	Total	197.458	371			
APP	Between Groups	171.911	190	0.905	3.598	0.000
	Within Groups	45.510	181	0.251		

		Sum of Squares	df	Mean Square	F	Sig.
	Total	217.421	371			
SEC	Between Groups	1294.702	191	6.779	3.152	0.000
	Within Groups	391.389	182	2.150		
	Total	1686.091	373			
DEL	Between Groups	199.970	191	1.047	2.782	0.000
	Within Groups	68.500	182	0.376		
	Total	268.470	373			
INF	Between Groups	168.063	190	0.885	2.729	0.000
	Within Groups	58.667	181	0.324		
	Total	226.730	371			

An ANOVA was also run to examine the differences in these five factors across the different states in which the wineries were located. The results of the ANOVA are shown in Table 5. The results indicate that the factors are significantly different ($p < 0.05$) across the 7 states considered in this study, including California, Idaho, New Mexico, New York, Oregon, Texas, and Washington.

Table 5
ANOVA Results by State

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
NAV	Between Groups	20.586	6	3.431	7.061	0.000
	Within Groups	176.863	364	0.486		
	Total	197.450	370			
APP	Between Groups	28.743	6	4.791	9.337	0.000
	Within Groups	186.769	364	0.513		
	Total	215.512	370			
SEC	Between Groups	60.781	6	10.130	2.282	0.036
	Within Groups	1624.637	366	4.439		
	Total	1685.418	376			
DEL	Between Groups	12.358	6	2.060	2.976	0.008
	Within Groups	253.275	366	0.692		
	Total	265.634	376			
INF	Between Groups	17.125	6	2.854	4.971	0.000
	Within Groups	208.990	364	0.574		
	Total	226.115	370			

Post-hoc comparisons were also conducted to determine where the differences in these states actually occurred using pairwise analysis. Since California is the leader in wine production in the US with between 70-80% of all wine coming from California (Wine Handbook, 2010), about 80% of the websites considered in this study were based out of California. Consequently, for the

pairwise analysis, we compared the websites of the Californian wineries to those from the other states. Results from the pairwise analysis demonstrate significant differences across the factors between wineries in California and those in other states.

Table 6
Pairwise Comparisons

		t	df	Sig.
NAV	Between Groups	2.631	66.738	0.011
APP	Between Groups	3.759	68.564	0.000
SEC	Between Groups	3.073	87.5158	0.003
DEL	Between Groups	-4.888	151.059	0.000
INF	Between Groups	2.156	68.768	0.035

Conclusions, Implications and Future Studies

The results of our factor analysis were quite dynamic. The measures used in the study are well established ones in the information systems field. Perhaps most intriguing was the finding that there exists a significant difference between California winery websites and websites for wineries in other states. While there doesn't seem to be consistency between the constructs of winery websites, the researchers believe that this is a good beginning to the understanding of what consumer demand and expectations are for a web presence. The study should be expanded and differences looked at between wine regions, in order to develop suggestions for the industry. This is especially true for smaller, developing wineries trying to create a market for their product.   An interesting extension to this paper would be to examine California-based wine websites and determine exactly what qualities distinguish those websites from websites for non-California based wineries.

This finding could have repercussions for how non-California wine is marketed on the internet. Since customers do note a difference between California websites and non-California websites, this could give others an impetus to follow the lead that California, the leading producer and seller of wine in the US, has set in website design. As California is the leader, the characteristics of these websites that drive consumer response could be emulated by other websites in other states in order to increase the impact of their presence on the internet.

Next, the six items of the pleasant interface construct proposed by Kim et al. (2002) loaded together and acceptable reliability was reported. The same results were observed in subsequent research (e.g., Parboteeah, 2005). Further, when developing the visual appeal construct, Loiacono and colleagues (2002) went through a stringent process of accessing the validity and reliability of the construct. In subsequent work, this construct has been deemed valid and reliable (e.g., Kim and Stoel, 2004).

Finally, in the case of the navigability construct, it is an established construct in the context of website acceptance (e.g., Loiacono et al., 2002). In our study, items of the pleasant interface construct loaded with those of navigability and visual appeal. While this was unexpected, it does make sense as the construct itself (i.e., pleasant interface) appears to be multidimensional. These results can also be attributed to the type of interface being considered. In the previous studies where these constructs were used, the websites were geared more towards the sales of products,

whereas in the current study, wineries do not rely heavily on revenue from their online ventures and these websites are regarded more as communication tools. Thus, it may be possible that the subjects had different perceptions when rating the same construct across these different websites. Future research should focus on replicating the use of these constructs for different websites. It may also be the case that the differences seen between California and non-California websites were driven by the interactions of these various interfaces. If the wineries do not rely heavily on revenue from their online ventures and these websites are in fact regarded more as communication tools, it may be that the most impactful websites cater to those who seek information on the wine or winery and not on purchasing wine via the internet. The differences between the quality of the factors discussed above could very well be driving a lot of the differences seen in the impact of the websites.

References

Barua, A., Pinnell, J., Shutter, J. & Whinston, A. (1999). Measuring the Internet Economy: An Exploritory Study. Austin, Texas: Center for Research in Internet Commerce, School of Business Administration, University of Texas at Austin.

Bauer, H., Grether, M., & Leach, M. (2002). Building Customer Relations over the Internet. *Industrial Marketing Management , 31* (2), 155-163.

Borenstein, S. & Saloner, G. (2001). Economics and Electronic Commerce. *Journal of Economic Perspectives*, 15(1), pg. 3-12.

Carroll, C. (2006). Marketing the boutique winery: 10 tips you can't afford to ignore. *Wines & Vines, September,* 46-48.

Cheung, C., & Lee, M. (2000). Trust in Internet Shopping: A Proposed Model and Measurement Instrument. *Proceedings of the 6th Americas Conference on Information Systems*, (pp. 681-689). Long Beach, CA.

Kaplan, R., & Norton, D. (1992). The Balanced scorecard- measures that drive performance. *Harvard Business Review*(January/February), 71-79.

Kim, J., Lee, J., Han, K., & Lee, M. (2002). Businesses as Buildings: Metrics for the Architectural Quality of Internet Businesses. *Information Systems Research , 13* (3), 239-254.

Litan, R. & Rivlin, A. (2001). Projecting the Economic Impact of the Internet. *The American Economic Review*, 91(2), pg. 313.

Loiacono, E., Watson, R., & Goodhue, D. (2002). WEBQUAL: A Measure of Website Quality. In K. Evans, & L. Scheer, *2002 Marketing Educators' Conference: Marketing Theory and Applications* (Vol. 13, pp. 432-437).

Madden, G. & Coble-Neal, G. (2008). Internet Economics and Policy: An Australian Perspective. *MPRA Paper No. 10686*, posted September 2008.

Morrison, A., Taylor, S., Morrison, A. J., & Morrison, A. D. (1999). Marketing small hotels on the world wide web. *Information Technology & Tourism, 2*(2), 97-113.

Ness, L. (2006). Creating effective winery websites: Is yours worthy? *Wines & Vines, June,* 84-89

Nielsen, J. (2000). *Designing Web Usability.* Indianapolis, IN: New Riders Publishing.

Nunnally, J., & Bernstein, I. (1994). *Psychometric Theory* (3rd Edition ed.). New York: McGraw-, Inc.Hill.

Palmer, J. (2002). Web Usability, Design, and Performance Metrics. *Information Systems Research , 13* (2), 151-167.

Parboteeah, D.V. (2005). *A Model of Online Impulse Buying: An Empirical Study* (Doctoral Dissertation, Washington State University). Retrieved from http://www.dissertations.wsu.edu/.

Salisbury, W., Pearson, R., Pearson, A., & Miller, D. (2001). Perceived Security and World Wide Web Purchase Intention. *Industrial Management & Data Systems , 101* (4), 165-176.

Schneiderman, B. (1998). *Designing the User Interface: Strategies for Effective Human-Computer Interaction.* Reading, MA: Addison-Wesley.

Van der Heijden, H., Verhagen, T., & Creemers, M. (2003). Understanding Online Purchase Intentions: Contributions from Technology and Trust Perspectives. *European Journal of Information Systems , 12* (1), 41-48.

Wine Handbook (2010). The Beverage Information Group.

Winters, M. (1997). Web marketing hits its stride: Wineries hurry to open virtual storefronts [Electronic Version]. *Wine Business Monthly*, March. Retrieved 08/15/03 from http://winebusiness.com/wbm/1997/bmc9717.htm.

Yuan, J., Morrison, A. M., Linton, S., Feng, R., & Jeon, S.-M. (2004). Marketing small wineries: An exploratory approach to website evaluation. *Tourism Recreational Research, 29*(3), 15-25.

Zhang, P., & von Dran, G. (2001-2002). User Expectations and Rankings of Quality Factors in Different Web Site Domains. *International Journal of Electronic Commerce , 6* (2), 9-33.