Asian Journal of Information Technology 5 (2) : 176-182, 2006

A Substantian Model for Success in Operating Non-profit Organization Websites

Yu-Teng Jang and S. Ernest Chang
Institute of Electronic Commerce, National Chung Hsing University
250 Kuo Kuang Road, Taichung City 402, Taiwan

Abstract: The purpose of this study is to propose a module-based website design model containing various functions with corresponding guidelines and suggestions from an integrated perspective of management and Information Technology (IT), for Non-Profit Organizations (NPOs) to operate (i.e., construct, maintain, and re-design) their websites. By adopting this model, NPOs will be able to clearly re-examine their website operations and select more suitable information and mechanisms to provide on. It is also suggested in our model to take advantage of standardized interfaces and mechanisms (which have characteristics such as Open standards, reusable components, visual-based, module-based, etc.) for achieving the goal of efficiently and effectively constructing and operating NPO websites. In addition, for the purpose of verification, and under an unexpected time constrain, we quickly developed a website prototype fully based on our model, and submitted it to a charity-related contest. During a relatively short five-day span, we were able to succeed with a "second highest votes" ranked result, which surprisingly showed us the potentials and feasibility of this model. This model could also be applied to other NPOs as a valuable reference for their management and e-commerce project teams to successfully design and implement their e-commerce initiatives.

Key words: E-commerce, non-profit organization, fundraising, website design and implementation, Information Technology (IT), internet computing and applications, web design framework

INTRODUCTION

WWW technology and Internet has been changing the way organizations perform their tasks, communicate with their customers and, in general, conduct their business[1]. By adapting this powerful technology into current business model appropriately, firms are able to gain diverse benefits such as improved process efficiency, cost saving, productivity, management information, convenience of communication, better quality of service/product, shortened development cycle (speed to market), enhanced customer relationship[2,12], etc. Hence, not only profit-earning companies but nonprofit organizations (NPOs) have been trying to seek for the most suitable electronic commerce model for themselves. Under the driving of Web technology, NPOs now got a unique opportunity to interactively reach multiple publics without huge financial burdens. However, NPOs do not have much resource, especially money, as common enterprises do. According to a field survey carried out in Taiwan, Lu[13] concluded that the biggest problem faced by NPOs is the lack of funds and IT-related personnel in conducting Information Technology (IT) into their organizations. In addition, from interviews with those nonprofit organizations that have their own websites, it is found that the purposes of why they established their websites is primarily for propaganda and for keeping up with the move of IT. In this study, we first address the model development based on the literature review, which gives us a picture of what a nonprofit organization website should look like and what it can provide to the public. Moreover, by participating in a charity-related contest held by TWNIC (Taiwan Network Information Center) and nine other organizations from various industry sectors in Taiwan, our "second highest votes" ranked result showed the feasibility of the proposed model.

THEORETICAL FOUNDATIONS

The Internet has brought ordinary enterprises to a new era and allowed small businesses to compete against industry giant. Driven by Internet, the way of conducting marketing tasks has been dramatically changed. Fundamental business principles that have been successfully utilized on commercial Websites also can be functionally applied to NPO or similar charity Websites [14]. According to the digital marketing

Corresponding Author: S. Ernest Chang, Institute of Electronic Commerce, National Chung Hsing University 250 Kuo Kuang Road, Taichung City 402, Taiwan

framework mentioned by Kierzkowski *et al.*,[15], there are five factors significantly helpful to make better strategies for profit-earning organizations (i.e., common companies)[16]. These five essential factors (attracting social actors, engaging social actors, retaining social actors, learning about social actors' preference, and relating to social actors) are used in our model.

The same as general e-commerce Websites, NPO Websites are set up for communicating, maintaining, and relating with the public and their existing/potential donators. As Grobman and Grant[17] suggested, a nonprofit organization Website should provide functions and information, such as newsletters, press release and publications, annual reports and financial data, brochures and information of its staff members, volunteer-related opportunities and demand, job openings, action alerts, product catalogs and order forms, upcoming conferences and seminars, organization's email address, etc. To conduct research, Saxton and Game[18] also proposed 18 indices (including news and regular updates, information materials, downloadable files, links to other sites, fundraising via credit cards, ability to make paperless and searchable online database, information about job vacancies, purchase of goods or services via credit card, online picture or video resource, email newsletter, campaigning and online activism, volunteering information, training courses, online grant application process, job application, email marketing and fundraising, chat-group and online community, and email enquiry service) through observing the websites of nonprofit organization in England. In addition, functions and information, such as directly purchasing/fundraising online, related laws and regulations, advertisement, and sitemap, should also be concerned.

With the necessary concepts mentioned above, we derived and developed a conceptual model, which is shown in Fig. 1, for operating (i.e., constructing and maintaining) a nonprofit organization website. From the integrated perspective of management and IT, NPOs will be able to analyze and decide what kinds of information and mechanism they should provide on their websites, by re-examining their operation and features of their websites with this model.

MODEL DEVELOPMENT

In developing our module-based model, we divide the process of constructing NPO website into 5 phases (attracting users, engaging users, retaining users, learning from users, and relating to users) based on derived experience and suggestions from previous works[15,17]. We then go defining viably important functions and information for each corresponding phase. In the beginning, since the donators are the most important asset of nonprofit organizations[18], selecting and providing appropriate mechanisms, functions, and information on their websites for retaining existing and attracting potential donators are the most important tasks to NPOs in the "Attracting Users" phase. As shown in Fig. 1, those functions and information are to be chosen and suitable for fulfilling the requirement in the first stage. Web users visit a Website not just only to search for specific information for solving problems, but also surf for stimulation, entertainment, and socializing[19]. To achieve the objective of entertainment and usefulness, NPOs are suggested to put interesting and useful information on their website. The extent of information materials may range from NPO tax (abatement) information, annual reports, and donation related laws, to the information of attractive products and services, hyperlinks to useful Websites, etc.

Based on the findings after surveying 100 largest NPOs in the United States, Kang and Norton[20] demonstrated that few NPOs (1-2%) did provide statements and incentives to encourage and invite visitors to bookmark and return to their Websites. Kang and Norton[15] also found that fewer than 10% of the sampled NPO Websites included interactive functions such chat rooms (4.2%) and online forums (8.3%). Hence, in the stage of engaging existing and potential users (donators), NPOs may take advantage of "virtual community" concept and incorporate functions such as online message board/chat-room/forum/community, directly purchase online, direct fundraising online, training courses, volunteer information, online job application, online grant application, online auction, e-learning courses, and others, into their websites (Fig. 1). Donations should not just include tangible assets (such as money, real estate, or any physical product and property), but encompass intangibles such as time, useful information, or personal skill. Donators may choose to be a volunteer or contribute his/her own knowledge to NPOs by joining their community. A NPO website with the functions shown in Fig. 1 is ready to engage both existing and potential donators for accepting donations of all forms.

In the third phase which is for retaining donators, NPOs should focus on the trust mechanism. Websites should be established not only based on the ease of use and usefulness principles as suggested by TAM[21], but also emphasizing and re-enforcing trust-building mechanisms[22,23]. On the other hand, providing a friendly interface and useful information to the public would increase their trust in the NPOs[22,23]. The functions

mentioned in the proposed model can help NPOs in building trust. Trust system is the most important part in the Internet environment[23-25].The more secure mechanism of protecting the donators when they donate online is utilized internally and displayed externally, the more those donators will trust the NPO and consequently, more likely to have repeated donations. NPOs should ensure that the online fundraising is safe enough, since if they do not provide this function it would be difficult to retain their customers - the donators. It is the security concern why several NPOs websites currently do not provide the functions of purchase online or fundraising online; they are afraid of destroying the public's trust and prefer to provide those online functions only after they can ensure the online transaction against fraud or other security risks.

According to Kang and Norton[20], fewer than 50% of the sampled NPO Websites provided feedback forms. In order to fulfill the requirement in the stage of learning from existing/potential donators, we suggest adopting the data-mining technology as the key driver. Information collected by using similar techniques can be used to conduct follow-up market research[9,10]. Hence, the functions on NPO websites should include data collection, data-mining, pattern prediction, and behavior (i.e., cognitive and attitudinal) evaluations. NPOs should be able to collect their donators' data in a more efficient way by utilizing their websites and modify their policy from donators' feedback. The useful information or behavior patterns derived from data-mining would let NPOs learn more from their donators and help NPOs to identify, study, understand, and predict the preference and the behavior of donators. Online shopper's behavior changes with different culture the shopper belongs to[26]. Donators in different regions or countries also have different behavior and cultures. For different relationship between organizations and their customers, there should be different marketing strategies correspondingly[27]. Only after NPOs understand their donators' behavior, they are able to adopt an appropriate strategy and make applicable policy for achieving their goal of operations.

In the last stage, NPOs should deal with the task of "relating to existing/potential donators." According to Port's[28] argument that "the customer is becoming the center of entire business universe," and based on the customer-centric concepts derived from Customer Relationship Management[29-31], we suggest the NPO websites to provide customized or personalized information, products, and services to the donators. A match-maker role played by NPOs helps them to re-distribute the resources and enhance the efficiency in the resource-delivery system. This would also positively attract and engage donators and lead to repeated donations. As a matter of fact, these five phases influence with one another, and once the key functions in all stages are provided by NPOs, these five stages would form an iterative framework which has an integrative and conducive effect in achieving the e-business goals of NPOs.

Aside from the determination of information and functions mentioned above, we'd like to propose using a standardized Web system which is able to provide various modules to webmasters for solving the biggest problem (i.e., the lack of money and IT-related personnel) met by NPOs managers while launching a website. This proposed Web system is visual-based, and as long as the webmaster and maintenance staffs understand HTML and digital image basics, they will be able to easily update and modify their website. In other words, this Web system provides a standardized interface to webmasters or staffs for the tasks of development, maintenance and routine updates. Since the adoption of standardized platform makes the information update easier and it also saves money and time compared with the traditional way of maintaining websites, the willingness of NPOs to conduct frequent update of information can be enhanced and the content will become more diverse and richer. This up-to-date information will also give existing donators and users (the potential donators) a better impression on these NPOs and their websites. These kinds of Web systems like XOOPS (eXtensible Object Oriented Portal System), osCommerce, or TWE-Commerce have been popularly utilized on portal development and online shopping-mall establishment, respectively[32-34]. There still exist many packages similar to XOOPS and osCommerce that are widely used by enterprises, organization, and individuals to achieve their e-commerce goals. For example, we opted to take advantage of using Open system software packages, such as Apache Web server, PHP Hypertext Preprocessor, MySQL database, and Apache Tomcat Servlet engine for our Web development projects. By choosing and adopting the standardized Web systems (which have characteristics such as visual-based, module-based, Open standards, only need of HTML and digital image basics, available packages, etc.), NPOs may overcome the obstacles like the lack of funds and IT-related personnel while establishing and maintaining their websites. Furthermore, as for NPOs, collecting money, integrating all resources and redistributing resources are their major tasks. These standardized Web systems can both reduce the website maintenance cost and increase the efficiency of information dissemination. These advantages should not be overlooked by NPOs. Especially for international or multi-area NPOs, the choice

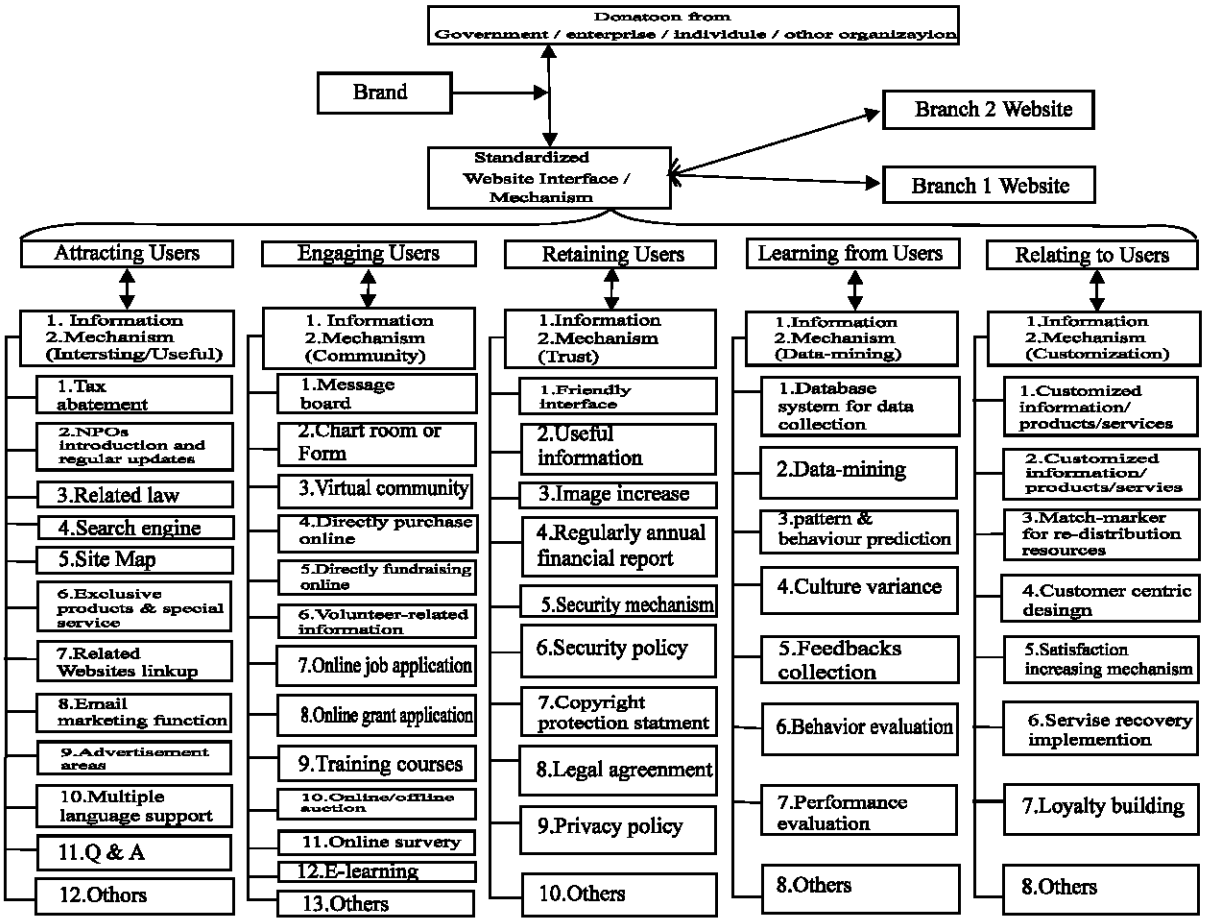

Fig. 1: A substantial model for success in operating a non-profit organization website.

of standardized Web system can immediately enhance the efficiency of data communication between their branches (Fig. 1).

In addition to adopting the proposed model and incorporating various functions and mechanisms into various phases, NPOs should pay attention on their brand management. Good reputation and better trust mechanism would tend to provide positive effect on market quality[35]. Driven by e-commerce, a company's reputation will be enhanced[2,10,36,37]. Also, reputation and system assurance of an Internet vendor are positively related to user trust [38]. Brand power brings diverse benefits to NPOs, such as better image, more donations, and higher extent of donators' trust. Trust certainly has a positive relationship with NPO brand. Brand-related signals are indicators that can be used to differentiate trustworthy Web merchants from untrustworthy ones[39]. If NPOs want to increase their brand image, one of the efficient ways is to strengthen their trust mechanisms, especially in the Internet context [23]. The more reputable the NPOs are, the more trust and aid these NPOs can earn form governments, organizations, enterprises, and individuals.

EXPERIMENT

We participated in the "Charity" section of a NetKing contest held by TWNIC and nine other organizations from various industry sectors[40]. The contest was started on October 1st and ended on November 20th, 2004. Since we got the information about this competition quite late (around November 13th), it became a perfect test environment for our proposed conceptual model, i.e., we have to achieve our goal of constructing an efficient and effective NPO website in a short period of time. We then prepared all the necessary materials (including a website prototype quickly built using open technologies and tools such as XOOPS and osCommerce) and finished the registration on November 15th which is the submission deadline. For demonstrative purpose, we designed two web-pages and drafted a ten-page proposal fully based on

our proposed model. In addition, we chose World Vision Taiwan as our theme. There are three main reasons why we made such a decision. First of all, World Vision is an international charity organization[41], which is in need of the task of efficiently relocating resources form one country to another. World Vision Taiwan can take advantage of our proposed model to enjoy its contributions on enhancing its reputation and a nation's (i.e., Taiwan's) image on the world stage. The second reason is that World Vision is famous enough, and its major activities like "Child Sponsorship," "Love Loaf Program," and "30 Hour Famine" have won good reputation and earned trust from the general population worldwide. After the Earthquake disaster happened in South Asia (mainly in areas of Pakistan, India, and Afghanistan) on October 8, 2005, World Vision Taiwan is one of the major charities (Fig. 2) which cooperate with Yahoo for fundraising[42]. The third reason is that the first author of this paper is a donator of World Vision Taiwan for about 5 years, and he wants to provide this research result (including the conceptual model and the design guidelines) as the intangible contribution to World Vision Taiwan and other NPOs for establishing, maintaining, and extending their websites.

The rules and regulations of this competition are shown as the following:

Schedule (Fig. 3):

- On-line Registration: Oct/01/2004~Nov/15/2004
- On-line Voting: Oct/01/2004~Nov/20/2004
- Result Announcement: Nov/25/2004

Participants in the "Charity" section should provide a proposal which contains the purpose of drafting this proposal, the functions, style and design direction on this website, and at least 2 web-pages for demonstration (Fig. 3).

As shown in Fig. 3, the homepage should be saved as a 320 x 240 pixel image (jpg or gif) for online voting[40].

RESULTS

Our work, including the prototype derived from the proposed conceptual model, together with the proposal and related documents submitted to the contest, received the second highest votes (Fig. 4) - 7953 votes in around 5 days (from Nov/15/2004 to Nov/20/2004), while the top-ranked work was submitted on Oct/28/2004 and it received 12934 votes in the period of 23 days. This result shows that NPOs websites can be efficiently and effectively designed and constructed based on our model and its corresponding guidelines (functions and mechanisms). Our proposed model and empirical result could be applied to other NPOs for efficiently and effectively achieving the goal of operating their websites.

DISCUSSION AND CONCLUSION

Although the Information Technology (IT) and Internet have played a very important role on humans' communication and have been widely used as an efficient and effective channel to deliver messages, only few researches have been done on proposing suitable model and development framework for analyzing, designing, constructing, maintaining, and enhancing NPOs websites. Based on the survey carried out by Kang and Norton[20], current NPOs are not effectively using the Web to connect with their audiences via technological advances; hence, they do need to re-examine their sites and provide better quality design for visitors. By referencing and implementing our model with substantial functions and mechanisms in five different but interactive phases, NPOs will be able to examine and enhance their e-commerce strategies and initiatives while conducting website design and development. Moreover, NPOs managers should use this model to benchmark their site's performance. As an attempt to prove the concept, we chose the World Vision Taiwan as our theme in a website design contest. The competition result has shown the feasibility and potentials of the proposed model, for quickly constructing an effective and efficient NPO website.

FUTURE RESEARCH

In this paper, we propose a module-based model which works on standardized Web systems and incorporates various kinds of viably important functions and information into different phases for constructing and maintaining NPO websites. Although we chose the World Vision Taiwan as the theme and examined our model in a charity-related contest, this model can also be applied to other NPOs for establishing, maintaining, or re-designing their websites. Research topics and empirical studies such as "the Real Value Derived from NPOs Website," "the Optimal NPOs Website System," "the Key Functions in NPOs Website," and others are on our list of future work.

ACKNOWLEDGMENTS

The authors sincerely appreciate the editor and anonymous reviewers for their invaluable comments and suggestions. They also would like to thank the National Science Council, Taiwan, for financially supporting this work, under contract number NSC-93-2213-E-005-022.

REFERENCES

1. Rowley, J., 2001. Remodeling marketing communications in an internet environment. Internet Research: Electronic Networking, Applications and Policy, 11: 203-212.
2. Auger, P. and J.M. Gallaugher, 1997. Factors affecting the adoption of an internet-based sales presence for small business. The Information Society, 13: 55-74.
3. Benjamin, R. and R. Wigand, 1995. Electronic market and virtual value chains on the information superhighway. Sloan Management Review, Winter. pp: 62-72.
4. Chan, C. and P.M.C. Swatman, 2000. Case study-from EDI to internet commerce: The BHP steel experience. Internet Research: Electronic Networking Applications and Policy, 10: 72-82.
5. Ghosh, S., 1998. Making business sense of the internet. Harvard Business Review, March-April: 126-135.
6. Grover, V. and P. Ramanlal, 1999. Six myths of information and markets: Information technology networks, electronic commerce, and the battle for consumer surplus. MIS Quarterly, 23: 465-495.
7. Lin, C. and G. Pervan, 2003. The practice of IS/IT benefits management in large australian organizations. Information and Management, 41: 13-24.
8. Malone, T., J. Yates and R. Benjamin, 1987. Electronic market and electronic hierarchies. Communications of the ACM, 30: 484-497.
9. Ng, H.I., Y.J. Pan and T.D. Wilson, 1998. Business use of the World Wide Web: A report on further investigations. Intl. J. Inform. Management, 18: 291-314.
10. Poon, S. and P. Swatman, 1999. A longitudinal study of expectations in small business internet commerce. Intl. J. Electronic Commerce, 3: 21-33.
11. Venkatraman, N., 2000. Five steps to a dot-com strategy: How to find your footing on the web. Sloan Management Review, Spring, pp: 15-28.
12. Wigand, R., 1997. Electronic commerce: Definition, theory, and context. The Information Society, 13: 1-16.
13. Lu, J.Y., 2003. Utilization of Information Technology and Cyber-Fundraising in Nonprofit Organization: A Case Study on Non-Profit Organizations in Taiwan, Master Thesis (in Chinese). Taichung, Taiwan: Department of Public Administration, Tunghai University.
14. Corby, K. and S. Sowards, 2000. Authoring specialized web sites: The education book reviews web site. References Services Review, 28: 47-54.
15. Kierzkowski, A., S. McQuade, R. Waitman and M. Zeisser, 1996. Marketing to the digital consumer. The McKinsey Quarterly, 3: 5-21.
16. Teo, T.S.H., 2005. Usage and effectiveness of online marketing tools among Business-to-Consumer (B2C) firms in Singapore.Intl. J. Information Management, 25: 203-213.
17. Grobman, G.M. and G.B. Grant, 1998. The Non-Profit Internet Handbook. Harrisburg: White Hat Communications.
18. Clemmenson, B., 1999. Donor management database use and evaluation. Fund Raising Management, 29: 28-33.
19. Hoffman, D.L. and T.P. Novak, 1996. Marketing in hypermedia computer-mediated environments: Conceptual foundations. J. of Marketing, 60: 50-68.
20. Kang, S. and H.E. Norton, 2004. Nonprofit organizations' use of the World Wide Web: Are they sufficiently fulfilling organizational goals? Public Relations Review, 30: 279-284.
21. Davis, F., 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13: 319-340.
22. Gefen, D., E. Karahanna and D.W. Straub, 2003. Trust and TAM in online shopping: An integrated model. MIS Quarterly, 27: 51-90.
23. Trcek, D., 2004. Towards trust management standardization. Computer Standards and Interfaces, 26: 543-548.
24. Kollock, P., 1999. The production of trust in online markets. Advances in Group Processes, 16: 99-123.
25. Reichheld, F.F. and P. Schefter, 2000. E-loyalty: Your secret weapon on the web. Harvard Business Review, 78: 105-113.
26. Bin, Q., S.J., Chen and S.Q. Sun, 2003. Cultural differences in e-commerce: A comparison between the U.S. and china. J. of Global Information Management, 11: 48-55.
27. Tao, Y.H. and C.C. Yeh, 2003. Simple database marketing tools in customer analysis and retention. International J. of Information Management, 23: 291-301.
28. Port, O., 1999. Customers moves into the driver's seat. BusinessWeek, October 4: 103-106.
29. Piris, L., G. Fitzgerald and A. Serrano, 2004. Strategic motivators and expected benefits from e-commerce in traditional organizations. International J. of Information Management, 24: 489-506.
30. Saxton, J. and S. Game, 2001. Virtual Promise-Are charities making the most of the Internet revolution? Research Report, 31 pages, published by ThirdSector - the news magazine for the voluntary sector, London, February 2001. [On-line]; Available at: http://www.virtualpromise.net.
31. Roh, T.H., C.K. Ahn and I. Han, 2005. The priority factor model for customer relationship management system success. Expert Systems with Applications, 28: 641-654.

32. The osCommerce Project. 2004. [On-line]; Available at: http://www.oscommerce.com.
33. The TWE-Commerce Project. 2004. [On-line]; Available at: http://www.twecommerce.org.
34. XOOPS Organization., 2004. A visual introduction to XOOPS, [On-line]; Available at: http://www.xoops.org
35. Jøsang, A., R. Ismail and C. Boyd, 2005. A survey of trust and reputation systems for online service provision. Decision Support Systems, Available online: In Press-In Press.
36. De', R. and B. Mathew, 1999. Issues in the management of web technologies: A conceptual framework. Intl. J. Inform. Management, 19: 427-447.
37. Nath, R., M. Akmanligil, K. Hjelm, T. Sakaguchi and M. Schultz, 1998. Electronic commerce and internet: Issues, problems and perspectives. Intl. J. Information Management, 18: 91-101.
38. Teo, T.S.H. and J. Liu, 2005. Consumer trust in e-commerce in the United States, Singapore and China. Omega, Available online: In Press-In Press.
39. Lee, B.C., L. Ang and C. Dubelaar, 2005. Lemons on the web: A signalling approach to the problem of trust in internet commerce. J. Economic Psychology, 26: 607-623.
40. NetKing, C., 2004. [On-line]; Information available at: http://www.netking.idv.tw.
39. Plakoyiannaki, E. and N. Tzokas, 2002. Customer relationship management: A capabilities portfolio perspective. J. of Database Marketing, 9: 228-237.
41. World Vision., 2004. [On-line]; Available at: http://www.worldvision.org.
42. Yahoo., 2005. [On-line]; Available at: http://www.worldvision.org.tw/edm/all-news/pakistan-edm.html.