IS WEB DEVELOPMENT PROCESS TEACHING AND TRAINING ESSENTIAL FOR SMALL ONLINE BUSINESSES IN WESTERN AUSTRALIA

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Abstract: This paper provides an answer to the question "is a web development process is essential to Small Online Businesses (SOB) in Western Australia". This answer came through employment of online survey (N=127) SOBs that allowed the collection of both quantitative and qualitative data. Descriptive analysis was conducted with an indication that 71% of respondents are interested in attending subsidized/low cost training to improve the layout and navigation of their website. This is of importance, especially as the internet has become a primary medium for accessing information for businesses. This paper concludes with series of recommendations calling for the facilitation to allow SOBs attend free teaching and training at the university level which will allow greater awareness to web development process between users/designers.

Keywords: Web Development Process, Small Online Business, Teaching, Training Course, University level

INTRODUCTION

The internet has changed users, and businesses experience in communication, interaction, collaboration as this technology becomes essential tool to assist them complete their tasks far more efficiently. These massive groups of users/ businesses reach the Internet through their computers and terminals via educational institutions, commercial Internet access providers and other organizations. This platform provides numerous benefits to consumers in relation to access to information, entertainment, research, business and marketing. Indeed, it allows "consumers to educate themselves about the information or products at their own pace, and consumers can instantly access only that information which is pertinent to their needs" (Issa 1999: 11, Issa 2008). Dou, Nielsen and Tan suggest that the internet

"provide(s) a low-cost [gateway]" to the global market for companies intending to or engaging in exporting, especially for small-to-medium enterprises located in peripheral economies and those operating in universal niche markets" (2002: 105). While Meng (2010: 547) defines internet marketing as "… the strategy that the agency or organization uses the modern communication technical methods to exchange the potential market as the reality market". Therefore, to be a successful online marketer, the basics of the marketing process should be established first, which are, "needs assessment, market research, product development, pricing, distribution, advertising, public relations, promotions and sales" (Janal 1995: 22). Today, suppliers have the capability to deal interactively with consumers at any time of the day or night in their home or office. The buyers can interact with their suppliers in two-way, not one-way, communication. It is obvious now that there are various advantages to businesses in using online retailing such as "quick access to the information, capturing a global audience 24 hours a day, seven days a week. Lately, the longer working day is driving customers away from queues at shopping malls and turning them to the convenience of the Internet" (Lindstrom 1999). Additionally, according to Baier (2010: 173) using the electronic channels will reduce the potential "for the seller to demonstrate the solidity and the capabilities of the products and the sales organizations, trust and content play an important role in the shoppers' selection and buying process." Internet marketing opportunities can be "neatly divided into two areas: products and services" (Segal 1998). The usefulness of the Internet depends directly on the products or services of each business. There are different benefits depending upon the type of business, as to whether the user is a supplier, a distributor or a retailer. The Internet is rapidly becoming an active marketplace for buyers and sellers for a fast-growing pool of consumer goods and services. Though still a small slice of the total shopping pie, the World Wide Web, in just a few years has become an important outlet for manufacturers and retailers of everything from information, clothes, food and books to computer toys and travel arrangements. Online ordering is also becoming increasingly common. Often this involves an initial setting up of an account for an individual by providing a credit card number or other sensitive information by completing an on-line form or using social network facilities, or through other traditional modes.

With the internet, businesses can become more efficient and able to produce higher-quality products, improving the commercial market for consumers. Internet marketing provides faster and more up-to-date information than traditional search techniques, allowing businesses to find essential information to integrate into their products more effectively. It is a magnificent research tool and communications device. By searching through databases and discussion groups, businesses can find information on their competitors, generate new-product ideas, solicit the opinions of consumers, and learn new approaches to the way they conduct their business. However, successful Internet marketing still relies on "many of the same basic principles that apply to any marketing efforts: knowledge, reputation, customer services and consistent image" (Franklin 1996, S2). Furthermore, Internet marketing also improves customer relations as businesses can interact more closely

with the public and understand their needs. By using Internet resources, businesses can make larger quantities of information available to the public than by using traditional marketing media. By posting important information about their products, businesses allowing consumers education process with regards to their products at their own pace. Consumers can easily access web pages with lists of commonly asked questions and answers when they have difficulties with products. They can instantly access only that information which is pertinent to their needs. Consumers can shop from the privacy of their own homes 24 hours per day without the interference of sales people. By using the Internet in the business sector, two important outcomes can be achieved: a) time and money can be saved, increasing business profit; and b) increasing consumer satisfaction. Since this media spans many countries throughout the world, companies are able to achieve an international presence for their products and services at low cost. Additionally, the Internet presence might provide equal opportunity for businesses to sell their products, and the companies with higher-quality products, better customer service and better web presence will succeed. The effects of commercial Internet use will benefit both businesses and consumers and change the marketing techniques of the future. The "Internet has become a major component of the marketing strategy and operations of businesses" (Kalaignanam, Kushwaha et al. 2008: 300). Although Websites have great power for marketing and spreading the good word about a business, it also has the power to damage a business's reputation. The key is the effective design of websites; however, currently users are not very satisfied with website design, especially the SOB's websites, with regards to navigation, usability, human-computer interaction, user participation and color. To prevent such problems among SOB, this paper aims to examine whether training SOBs in this field is significant to develop a successful website in Western Australia. This is especially important as earlier research conducted by one of the co-authors indicates that Australian websites were missing the essential aspects to develop a successful website to attract more users to visit them. This paper outcome though limited but adds a valuable methodological, theoretical and practical significance to the current website development process literature. This paper provides background and context, research methodology and questions, results and discussion, future research and conclusion.

WEB DEVELOPMENT PROCESS AND CONTEXT

To develop a successful website, designers and users must understand the basic aspects for developing websites, i.e. Usability, Human Computer Interaction (HCI), Participation, Color and Training. Under this section, the researchers will provide a small introduction regarding the importance of aspects in a web development process to satisfy users' needs and increase their satisfaction, as Lee and Kozar (2012) found that current websites still contain a number of usability problems, such as understanding and navigation difficulty, format inconsistency, and lack of interaction and reliability. Usability refers to the "the capability in human functional

terms to be used easily and effectively by the specified range of users, given specified training and user support, to fulfill the specified range of tasks, within the specified range of environmental scenarios" (Shackel 2009: 340). Alternatively, a new study by Alonso-Rios et al. (2010: 53) indicated that concept of usability derives from the term user friendly, defined as "an expression used to describe computer systems, which are designed to be simple to use by untrained users, by self-explanatory or self-evident interaction between user and computer." Additionally, Nielsen (2003) defines Usability as "a quality attribute that assesses how easy user interfaces are to use. The word "usability" also refers to methods for improving ease-of-use during the design process." The usability evaluation stage is an effective method by which a software-development team can establish the positive and negative aspects of its prototype releases, and make the required changes before the system is delivered to the target users. Usability evaluation is about observing users to "see what can be improved, what new products can be developed" (McGovern 2003). It is "based on human psychology and user research" (Rhodes 2000). HCI specialists "observe and talk with participants as they try to accomplish true-to-life tasks on a site (or system), and this allows them to form a detailed picture of the site as experienced by the user" (Carroll 2004).

Human-Computer Interaction (HCI) was adopted in the mid-1980s as a means of describing this new field of study. Preece et al. (1994) indicated that this term is mainly focused on the interaction between users and computers. HCI "is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them" (Preece et al. 1994; 7). Therefore, the reasons for studying HCI in the development process are to create interactive computer systems that are usable and practical as well (Head 1999). The term HCI relates to several stages in the development process, including the design, implementation and evaluation of interactive systems, in the "context of the user's task and work" (Dix, Finlay et al. 2004: 4). The implementation of HCI can be perceived as an art as well as a science because it requires a comprehensive range of skills, including an understanding of the user, an appreciation of software engineering capabilities and application of appropriate graphical interfaces. "If we are to be recognized as developers with professional capabilities, as competent practitioners, then it is critical to understand what makes an application interactive, instructional and effective"(Sims 1997). HCI "is concerned with the design of computer systems that are safe, efficient, easy and enjoyable to use as well as functional" (Preece, Rogers et al. 1993: 11). Vora (1998) describes a framework, which provides for effective HCI for websites, with the main task being to have a clear understanding of user needs: who the users are, and what their tasks and environments are. Additionally, HCI is "concerned not only with how present input and output technologies affect interaction, but also with the consequences of new techniques such as speech recognition and generation (input and output)" (Booth 1989: 5).

Participation is "A process in which two or more parties influences each other in making plans, policies or decisions; it is restricted to decisions that have future effects on all those making the decisions or on those represented by them" (Mumford 1995: 12). User participation in the development process can be defined as the "extent to which the user engages in systems analysis activities such as project definition and logical design decisions" (Doll and Torkzadeh 1989:1155), and to determine "information requirements by encouraging users and other to indicate what they do and what information they need to do it" (Hepworth, Vidgen et al. 1992:122). Furthermore, user participation is defined as the "behaviors, assignments, and activities that users or their representatives perform during the information system development" (Hartwick and Barki 1994: 441). A high level of user participation is likely to enhance user "ownership" of, and identification with, the resulting system – in this sense "'user involvement' refers to the set of all such user's subjective attitudes toward, or psychological identifications with, information systems and their development" (Kappelman 1995:70). Research has shown that user participation in system design will greatly assist in producing a successful system. It results in less time in the implementation and testing stages as users are more knowledgeable about the system. Research and experience have shown that to run a successful application development process without any frustrations and dissatisfaction, the designer needs to involve the users and set clear objectives. This will help the designer incorporate the views of users in all the following development methodology stages: planning, design, implementation and testing.

Color in the web development process is very significant in the success or failure of a website. Until now, the designer mistreatment of using the color element by choosing the color based on their personally rather on scientific evidence (Holtze 2006). This will influence user visit to these websites in respect to the style, layout, structure, navigation, usability, speed, and how satisfied with the whole website design. Furthermore, Shneiderman and Plaisant (2010) posited that designers should limit the number and amount of colors, and choosing the color which matches the website contents and audience. Moreover, Te'eni et al. (2007) confirmed that color should be used to assist users to understand and evoke information in reading and decision making, and helping them to detect and recognize information. In addition, Color in consumer-oriented websites that match the social and emotional perceptions of users are expected to "increase trust and be more engaging, also increase user enjoyment or loyalty" (Cyr, Head et al. 2010: .2). Training is an essential aspect in the web development process, since training will give the users the necessary training which is required to develop and using a website (Issa 2008). Furthermore, Gerjets and Hellenthal-Schorr (2008) explained that web training for users is fundamental since it taught them to distinguish problems within their website and assist them to develop new strategies for solving the problems in their website, i.e. usability, navigation, layout, structure, text, and color. In addition, training should consider, besides the above, accessibility, globalization, readability and cultural difference issues (Al-Badi and Mayhew 2010). Currently, users are

becoming very sophisticated in the ways they can access information online from anywhere and any device. Therefore, web designers should adopt best-practice methodology (ies) to ensure the web design is meeting user requirements, since the majority of websites globally and locally are designed in the way to decrease user frustration in respect to the navigation, usability, Human Computer Interaction, User participation and color. However, there are still some websites, which are missing the essential desires for designing websites successfully. Consequently, training businesses and users, especially SOB is critical for website development process as users can gain knowledge of the methods which are required to develop and design an efficient website which meets customer's requirements and gaining new technology to support and maintain their website by themselves to reduce maintenance and cost aspects.

RESEARCH QUESTION AND METHOD

This paper investigates the question "Is training SOB for Web development process is necessary for their organization and enterprises," as websites become a mandatory for SOB to promote their business and satisfy their users. For this paper, an on-line survey method was used to collect data from 127 small on-line businesses in Western Australia. The purpose of using this approach lies in the fact that: (1) to assess whether training users is significant in the web development process, especially in Western Australia, (2) to assess whether training sessions will assist their online business to become more fruitful and successful, and (3) to attract more users to their websites. Similar to any other methodology, adopting an on line survey for this research has its strengths and weaknesses; as for the strengths, "the survey offers greater anonymity; less expensive; respondents can take more time to respond at [their] convenience; I can be administered electronically, if desired" (Cavana, Delahaye et al. 2001: 245). As for this method's weaknesses, these can be summarized as: "response rate is almost always low; 30 per cent rate is quite acceptable; follow-up procedures for non-responses are necessary" (Cavana et al 2001: 245). Furthermore, Van Selm and Jankowski (2006) indicated that on-line survey can recruit potential respondents with special interests and experience, especially Gen Y, who depends mainly on computer for communication. McBurney and White (2007) and Dillman (2007) indicated that on-line survey can be accessed from anywhere and anytime, easy to manage, inexpensive and practical, has a high response rate and finally, provide more dynamic interaction between respondent and questionnaire more than using email or paper surveys. Finally, online survey can compound multiple-choice questions, scales, open-ended questions, and single, multiple response questions (Evans and Mathur 2005).

RESULTS AND DISCUSSION

The survey was composed of eight questions. Five were seeking responses with simply two options "yes" and "no", while the last two questions were designed to provide multiple choices for respondents to choose from with the last question being open-ended question. The survey response rate was 83%. Respondents provided interesting and rather valuable comments in respect to their training needs in this regard. The training program suggested in this online survey is called "Development and delivery of a training program 'B-Web Connected: connecting consumers to small businesses", and is intended to cover the internet technology; electronic business concepts; user centered design process; evaluation and testing; navigation and prototyping: awareness of internet security and legal issues; usability; HCI principles and guidelines; task analysis; HCI development in system development life cycle; Color; Web 2.0, Web 3.0. In addition, this training intends to provide participants, depending on the level of their experience, with the necessary tools to either design a new website prototype or to enhance their existing one incorporating the latest research on style, structure and functionality that will attract consumers to their business. This training will be followed by a one-hour phone or email coaching session for each participant to finalize their website design bringing it to the prototype stage. The three-day training program will be of 18-hour duration and delivered twice in 2013 and twice in 2014. The training program will be delivered in a highly experiential manner using adult learning methodologies.   The anticipation output will be a complete website design prototype that is customized to their consumer need which will be ready for a professional web developer to enhance.   A prosperous website must first be capable to attract customers to it; and upon reaching the site, the customers must feel comfortable with the aesthetic appearance of the website and be able to find relevant and useful information with ease. Successful marketing on the Web relies on careful use of appropriate methodologies to create an effective and efficient website, to maximize ROI with expenditure of minimum time and capital. The survey results (Table 1) indicate that, while 39% were not satisfied with the appearance and structure of their businesses' websites, and expressed the need to act towards improving these websites, 58% were satisfied stating they have witnessed improvement in the effectiveness of their business in the presence of their website.

Table 1.

Online Small Businesses -Western Australia (Prepared by the Authors)

Survey questions with the options of 'Yes' and 'No'	Yes	No
Do you have a website?	72%	27%
If you answered No to question 1, do you plan to develop a website within the next two years?	29%	8%
If you answered yes to question 1, are you satisfied with the appearance and structure of your website?	35%	39%
Do you think your website has improved business performance	58%	11%
Would you be interested in attending subsidized/low cost training to improve the layout and navigation of your website?	71%	22%

These results, echo the results of another survey but of a larger sample (i.e. 1,500), conducted by Sensi's e-Business Report (August 2009: 23). Indeed, the general feeling amongst this sample (large 'Sensi' and small 'this paper') indicate that having a website had improved their business performance, which indicates that having a website in this age and time is a positive issue that reflects positively on businesses. In our survey respondents spoke of their interest in learning about *"...trips and traps for 'young' website designers – how to avoid the obvious mistakes in order to create a useful website that is not just fancy," "Be able to bring the control of our web site in the house rather than relying on an external company," "Learn how to write a website planning document to give to a web development company, so they build something that will work for my business," "To save ongoing costs currently being paid to a designer to maintain the site," "It would give us an understanding of the difficulties and procedures of establishing and maintaining a website." "Gaining advanced knowledge and becoming more self-sufficient in terms of updating and maintaining a company website. Being 100% dependent of 3rd parties can sometimes be an uncomfortable situation to be in."* The designers would largely focus on the technical aspects of the project and do not pay sufficient attention to the users' expectations and requirements. In this respect, the Sensis e-Business Report (August 2009: 31) indicated that *"the largest concern small businesses identified relative to medium businesses involved a perceived lack of expertise and knowledge of computers. Overall, 21 per cent of small businesses identified this issue as a major concern."* This feeling was also reflected in the survey with comments such as *"understand the language to speak to a web developer / we are at the mercy of web designers / optimal for my requirements / get it right the first time / best understanding tech speaks / control on the design and use / Work out if a web site really helps our business with. Marketing, best understanding tech speaks, gain marketing insight, gain graphic skills, gets help to*

build a web site that I can easily alter if "hits" are not resulting in enquires or sales."

Some designers try to mimic successful sites by copying attractive images from other websites and thus create a home page without a basic knowledge of design principles. Apart from the obvious business risks associated with copyright infringement, websites such as this lack unity as the graphics and text are written and created by different writers and designers. A website that is designed reflecting the business, its owner and customers will better reflect its personality and offer a far more coherent picture of the business. As Sheridan (1999) noted, with each generation consumer are "becoming more sophisticated, and as they do so, their expectations and behaviors are changing; do not get caught designing for yesterday's audience - stay on the cutting edge with this kind of research so that you can design for tomorrow's audience!" This is not just about aesthetics, but also about effectiveness. Other issues of customer frustration include problems related to navigation, interactivity and downloading. A poorly designed interface may have a negative impact on customers' confidence with both the site and their trust in the business. To create an effective website, designers need to ensure that the requirements of the customers are met so that they are encouraged to explore and re-visit the website. While Hoekstra (2000) advocated that proprietors that create their own site with a passion may include something of themselves, they still require a structured and methodical approach to create a successful, productive and sustainable website.

The substantial difference in our proposed course is that it involves a participative design process. The small business proprietor will be asked to survey their customers prior to attending the course, to ensure the website design is focused on the requirements of the target audience. Based on the interview data collected from the first author's PhD research, many businesses favored a customer-centered approach. This includes actively seeking customers to provide feedback and information on what they would find valuable when they visit the website and to extend this further by including some of the latest Web 2.0 tools to understand who their customers are, the technology that they use and their social context since technology is rapidly changed. As most of the respondents in our survey designated that "The technology has changed drastically, and I would be interested in find out the best solution to meet OUR needs. The site must also be accessible to non-Microsoft software users." Small businesses need to understand the preferences of different generations of customers ranging from the Silent Generation to Baby Boomers to Gen X, to new generations of Gen Y and Gen Z; all generations need to be engaged for business sustainability. As most of the respondents in our survey indicated that, a great website will be a "…total necessities in the future…" *"Better 'visibility' on the web and greater ease of communicating company information to prospective clients."* While some visitors to sites require informational content and some prefer interactivity, all want some degree of flexibility, usefulness and ease in the usability aspects of the site.

From the survey outcomes, it was noticed that training users is an essential and crucial step for SOBs since most participants indicated that training will expand their knowledge *"of what can be achieved outside the box"*; to improve *"the stickiness of [their] our websites and improve [their] own website appearance and make it easy to use";* to develop *"clear marketing focus and implement through the web";* enhance *"the visibility of our business"* and finally, *"finding out the do's and don'ts when it comes to web design/web marketing, and finding out about search engine- optimization and how best to utilize it."* Furthermore, most participants contended that completing a training session at a university level will assist their organization on two fronts: (1) saving and improving their financial status, and (2) the in-house improvement of their websites. Based on the above and the strong demand (i.e. 71%) of respondents from Online Small Businesses are interested in attending subsidized/low cost training to improve the layout and navigation of their website, it is crucial that training is conducted. This training program seeks to develop, deliver and evaluate a more effective, participative methodology for developing small business websites. The program will be customized to SOB and will provide the techniques and tools required to develop an effective, efficient, easy to use and up to date website, including the utilization of Web 2.0 and Web 3.0 tools. As indicated, SOB will be asked to collect information from their customers, by way of a survey designed for them by the researchers, in order to develop a prototype for their website. SOB will also be provided with ample opportunity to reflect on who their current customers are, and to identify like target groups for the future. The outcome of the program will be a website design and plan for implementation, roll-out, required resources and on-going maintenance.

CONCLUSION

This paper examined the importance of teaching and training users for SOBs in Western Australia, presenting the findings of data collected from 127 SOB. These findings highlighted the fact that teaching and training is essential for them as through the three-day teaching and training program SOB participants anticipating that such intensive and short-term training would assist them to learn the fundamental and advanced knowledge and skills in web design. It is projected that the teaching and training program will be delivered using adult learning methodologies and be highly experiential. It was also noticed that there is a massive demand for this training program as most of the respondents demonstrated that this training program will help them to develop clear marketing focus and implement this through the web, understanding the language to speak to web developer and website cost. Therefore, the three-day teaching and training program will be of 18-hour duration and delivered twice in 2013 and twice in 2014, and the outcome of the program will be a website design (High-Prototype) and plan for implementation, roll-out, required resources and on-going maintenance.

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