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Challenges and Issues of E-Commerce

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Abstract— This paper analyzes some of the opportunities and challenges of ecommerce. It highlights some of the challenges faced by users in browsing websites and conducting searches for information and provides a few guidelines or proposals on how to overcome some challenges. This paper very clearly expresses the issues faced by customers when it comes to web design and trust. This paper is the outcome of a review of various research studies carried out on E-commerce. It has been viewed and reviewed several times for the sake of accuracy.
Keywords— E-commerce, web usability, web design, navigation, trust.

I. INTRODUCTION

A. General

E-commerce or Electric Commerce is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. These business transactions occur either as business-to-business, business-to-consumer, consumer-to-consumer or consumer-to-business. Since 1997, the Web has evolved into a true economy and a new frontier for business. In spite of what some observers refer to as the "Internet bust", Web use for e-commerce continues to grow as many established brick-and-mortar businesses incorporate online components into their marketing strategies.

Elizabeth Goldsmith and others (2000) have reported that the general category of e-commerce can be broken down into two parts:

1) E-merchandise: selling goods and services electronically and moving items through distribution channels, for example through Internet shopping for groceries, tickets, music, clothes, hardware, travel, books, flowers or gifts.

2) E-finance: banking, debit cards, smart cards, banking machines, telephone and Internet banking, insurance, financial services and mortgages on-line(Elizabeth Goldsmith and others,2000).

B. Overview

ECommerce is advancing at an increasing pace and various types of ecommerce websites enter web everyday. The competition is increasing. The retailers now are not selling directly to customers, but they have to do something to make customers attracted towards them. Yet we find that companies are treating online customers with a certain level of ignorance which might ultimately lead into loss of customers.

E-Commerce has got the potential to generate personalized experience for shoppers. There are a number of challenges that the existing E-Commerce shopping portals are facing. Web shoppers are becoming more and more aware of online purchasing alternatives, and more importantly, they have become less enduring with Web sites that are difficult to understand and use. The truth is that the Web is to a large extent about "instant gratification". Users want to find the information they want, do it quickly, and to do so with little effort. E-commerce site designs that overlook these facts risk the possibility of losing valuable customers and, in the long run, may even risk their economic viability. Unfortunately, many of today's e-commerce sites still commit a number of errors in usability design. Slow download times, poor navigability, and confusing content are common among Web sites (Nielsen, 1999b). One objective of this paper is to highlight important issues in usability design in the e-commerce context. Specifically, we focus on an issue that is perhaps the most commonly cited problem in Web design – users' inability to navigate Web sites and to search for desired information.

Another issue that has always been important, but is only recently receiving more attention is **trust** in e-commerce. Clearly, the Web-based environment places a unique set of constraints on the buyer-seller relationship that did not exist in traditional face-to-face transactions. Not anymore can the buyer meet with a salesperson, ask questions, observe body language, or actually see the physical product. For many potential customers, this raises real concerns about the trustworthiness of the selling organization, the reliability of the buying process, privacy of the transaction, and guarantees of buying satisfaction. Until now, the subject of trust has received little attention in the e-commerce research literature. Whereas many e-commerce sites have implemented some recommendations from the marketing area for promoting trust in the buyer-seller relationship, or have implemented their own common sense solutions for promoting trust, we observe that most of them have done so in a rather hit-or-miss way. To explore possible answers to this question, we must investigate issues such as the antecedents of trust, buyer

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and seller characteristics affecting the trust relationship, and how ongoing trust can be maintained. A part of this paper discusses the growing importance of trust in the context of Web-based commerce and provides a number of suggestions to guide future research in this area.

II. PROBLEM IDENTIFICATION AND PROPOSED METHODOLOGY

In this section we touch on specific usability issues related to e-commerce and the user's experience in purchasing over the Web.

A. Challenges of Purchasing Over the Web

Poor Web site design is a huge factor affecting the productivity of Web-based Retailers. A recent study has been conducted in which users made 496 attempts to perform various tasks on 20 large and small e-commerce sites – with only 56% of those attempts being successful. If these results are indicative of the larger population of e-commerce sites, then retailers may be losing a large percentage of potential sales simply because their sites are confusing and difficult to use. The study describes a number of design mistakes that many Web sites commonly make, including: slow download times, non-standard link colors, long scrolling navigation pages, scrolling text or looping animation, orphan pages, bleeding-edge technologies, and several others.

To address these and other design challenges, we make some proposals. For example, for homepages, starting the page with a short description that summarizes what the company does, write a window title with good visibility in search engines and bookmarks The major importance is in facilitating users' understanding and navigation of ecommerce sites. Designs that cut users' cognitive overhead lead to greater success generally.

B. Trust in E-Commerce

A key reason for people's lack of willingness to provide information or shop online is "the fundamental lack of faith (or trust) between most businesses and consumers on the Web" (Hoffman, Novak, and Peralta, 1999, p. 80). In other words, trust is necessary for 'online relationship exchanges' involving personal and financial information which take place in a virtual environment characterized by uncertainty, lack of control, and potential opportunism (Hoffman et al., 1999; Bhattacherjee, 2002). Keen (1997) argues that the lack of consumer trust is the most significant long-term barrier for e-commerce. Similarly, as echoed by Bhattacherjee (2002) based on the opinions of several other e-commerce researchers, "lack of trust may eventually pose a substantial threat to the successful conduct of electronic commerce" (p. 212). Hence, a key question for e-commerce success from a human-computer interaction perspective is (Rosenbloom, 2000): How can e-commerce technology be engineered to inspire consumer trust?

C. Concept of Trust in E-commerce – its Components, Antecedents and Consequences

Trust is a complex, multi-dimensional, context-dependent construct (Gefen, 2000; McKnight, Choudhury, and Kacmar, 2002). According to Friedman, Kahn, and Howe (2000), we trust "when we are vulnerable to harm from others yet believe these others would not harm us even though they could" (p. 34). In the context of e-commerce, consumer trust can be defined as the willingness of the consumer (trustor) to be vulnerable to the actions of an online party (trustee) by engaging in online relationship exchanges with the party. By providing sensitive information to the online party as part of the exchanges, the consumer, who has limited ability to monitor or control the behavior of the online party, becomes vulnerable to the actions of the party. By becoming vulnerable, the consumer is taking a risk in the relationship. Hence, "trust is not taking risk per se, but rather it is a willingness to take risk" (Mayer, Davis, and Schoorman, 1995, p. 712). Consumers' lack of trust in the online environment is demonstrated by their fear of giving away personal and financial information because of privacy concerns arising from lack of environmental control and control over secondary use of information (Hoffman et al., 1999). According to Hoffman et al.'s (1999) analysis, 63% of consumers decline to provide personal information to Web sites because they do not trust those collecting the data, 69% of those who refuse to provide such information do so because the Web sites provide no information on how the data will be used, and 65% indicate that it is not worth the risk. Almost 95% of Web users have declined to provide personal information to Web sites at one time or another when asked (Hoffman et al.,1999).Although the importance of online trust has been demonstrated in the studies, and there is no doubt that trust is important for the success of e-commerce, the antecedents of consumer online trust and how they influence overall trust perceptions warrant further study. Consumers' concerns with Internet security and information privacy are two key hurdles faced in e-commerce (Cox, 1999; Ernst and Young, 2001; Swaminathan, Lepkowska-White, and Rao, 1999). To overcome these hurdles, Web site design should help create and establish a climate of trust (Shneiderman, 2000). Trusted third parties play an increasing important role, and feedback mechanisms have also been introduced.

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III. PROPOSED METHODOLOGY

We discuss a few proposals under the following three main categories: Content, Design, and External Certifications and References.

A. Content

With regard to Web site content, the paper highlights three guidelines that help foster consumer trust following each guideline below denote specific traits that promote the development of trust:

Proposal 1: Disclose Performance History (Competence)

Disclosure of a company's pattern of past behavior, including reliable self-reports of performance history and data, helps inspire consumer trust in future performance (Shneiderman, 2000). Openness about performance inspires confidence and trust in consumers

Proposal 2: Provide Identity of Company (Integrity)

To develop trust in consumers, it is necessary for e-commerce Web sites to provide the identity and complete information of the company such as their physical location, full contact information, ownership, management,purpose, and mission (Greenspan, 2002; Shneiderman, 2000). Without a basic understanding of the background and management of the company, consumers are unlikely to have enough faith and confidence to do business with the company. Disclosure of such company information provides a sense of accountability to the consumers.

Proposal 3: Post a Clear Privacy and Security Policy (Integrity)

Providing a clear and easy-to-understand privacy and security policy is essential for the development of trust(Greenspan, 2002). A privacy and security policy lays out information concerning how and what types of consumers' personal and transaction information will be collected, how they will be used, how they will be protected from unauthorized access. With such information, users are able to make informed decisions concerning the benefits and risks of engaging in online business transactions with the company.

B. Design

As for Web site design, three guidelines can be used to instill trust in consumers following each guideline below denote specific traits that promote the development of

Proposal 4: Timely and Professional Web Site Design (Integrity and Competence) Professionalism is an important aspect and determinant of trust. A professionally designed and user-friendlyWeb site instills trust and confidence in consumers. In other words, the Web site is expected to follow an orderly structure that is easy to understand and navigate, and be thoroughly tested from both the technical point of view and the usability standpoint. Having privacy and security policies that are easy to find, easy to read, and strictly enforced, and a transaction process that is simple to follow, also contribute to consumer trust.

Proposal 5: Reliable and Secure Technology (Integrity and Competence)

As discussed earlier, security has always been a major concern of consumers (Cox, 1999; Ernst and Young, 2001). It is the responsibility of the vendor to ensure that its technology is reliable and secure, and to provide security assurance to its consumers. A high level of security controls should be in place to ensure timely and accurate completion of transactions, to detect and prevent the occurrence of fraud and manipulation (i.e., hacking),and to safeguard transaction authentication (Siau and Shen, 2002).

Proposal 6: Informed Consent (Integrity and Benevolence)

Decisions concerning the tracking and use of personal information, such as putting cookies on users' machines, tracking of users' mouse movements, the types of customer information captured, and sharing of customer profiles with other parties, should be made by individual users (Friedman et al., 2000). Informed consent involves informing users of the potential benefit and harm of an online interaction and providing them the option to explicitly consent or decline (i.e., using opt-in/opt-out feature) to participate in the interaction (Friedman et al., 2000). This is an effective way to allow users of a Web site to make decisions concerning what online companies are allowed and not allowed to do with their profiles and personal information.

C. External Certifications and References

External certifications and references are helpful in cultivating trust because of their indirect benefits. Two guidelines have been proposed in the paper, following each guideline below denotes traits that promote the development of trust:

Proposal 7: Get Certifications from Third Parties (Integrity and Competence)

Certifications from third parties can increase credibility of online services (Shneiderman, 2002). Certifications may be obtained from professional third parties such as the American Medical Association, and/or third party assurance services such as TRUSTe (www.truste.com), BBBOnLine (www.bbbonline.org) and VeriSign (www.verisign.com). Approvals from professional associations

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enhance credibility concerning the competence of the online vendor and the quality of services offered, while third party assurance services certify that privacy and security practices and enforcement are in place.

Proposal 8: Provide References from Past and Current Users (Competence, Integrity and Benevolence)

References from past and current users provide an effective means for assessing reputation which is a key antecedent of consumer trust. In the online environment, such reputations of online firms or parties can be gathered from online comments and ratings posted by consumers and experts in the area. These systems, which collect, distribute, and aggregate feedback from participants, are referred to as *reputation* systems Examples of reputation systems include the reputation manager (or Feedback Forum) of eBay (www.ebay.com) and the rating and review systems available from Amazon.com, Bizrate.com, and Epinions.com.

IV. CONCLUSION

Challenges and issues of e-commerce is an important research area. With the popularity of the WWW and the constant emergence of new technologies designed for the Web, the amount of research that requires attention is extraordinary. A good understanding of Web-based interaction is central for designing usable and effective Web sites.

In this paper, we examine issues and challenges in the design of Web sites and provide suggestions for improvement. Studies on Web revisitation were also reviewed and recommendations concerning design and management of bookmark (or hotlist),and history list are presented. discussed. Building upon our understanding of the issues involved in Web navigation, we examine these issues in the e-commerce context

With the advancement of Web-based technology, e-commerce is now a reality. However, the lack of trust or the difficulty of cultivating trust in an online environment poses a major hurdle to the future of e-commerce.

Research on trust is needed to understand its backgrounds and to plan ways to foster trust online. A few proposals are provided in this paper to integrate trust-building strategies into e-commerce sites. Future research is needed to assess the efficiency of these strategies and to propose other forms of trust building mechanisms.

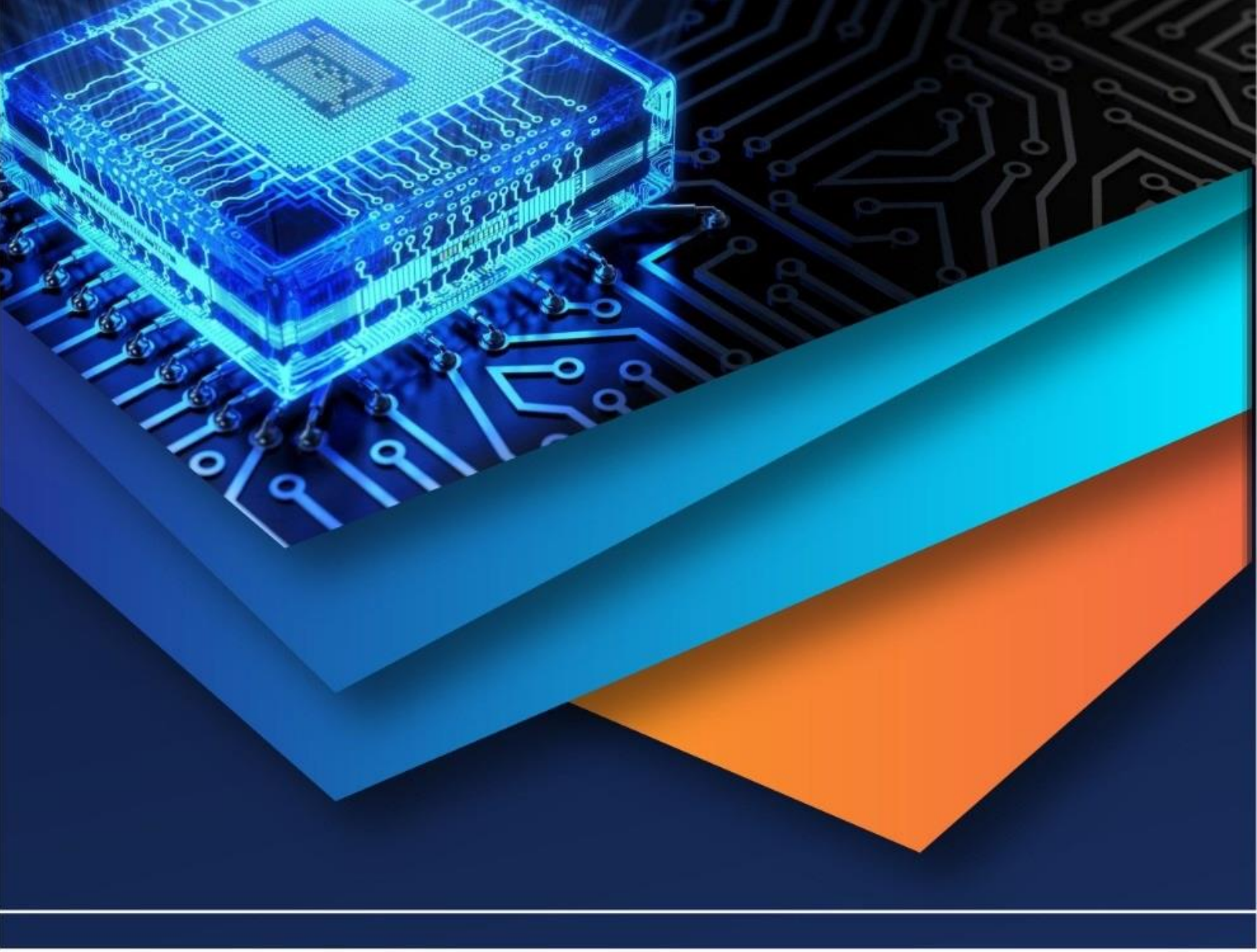
Although the issues covered in this paper are not in any way complete, we highlight some of the trends and important issues for future research in e-commerce. This article has covered two key concepts related to ecommerce

– Web navigation and development of trust online. In order to succeed in e-commerce, online vendors need to begin with a user-friendly and trustworthy Web site so that users feel comfortable and confident interacting with it. The process of navigation and search on the Web site should require minimal effort, and the Web site should be designed in such a way that it facilitates product search within a short amount of time and provide users with a good sense of control over the interaction. Having a user-friendly Web site, by itself, is not adequate. It also needs to cultivate a climate of trust and confidence among its users. For example, a privacy policy and tight security controls should be in place, information on all aspects of the customer relationship should be clearly stated on the Web site, informed consent should be used to maintain the highest level of consumers' privacy, third party certifications may be used, and having a reputation system in place would be very useful.

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