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The Use of Reputation Mechanisms in Electronic Commerce: An empirical investigation

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Abstract

Reputation is a key factor in successful commerce. In the absence of direct product and company knowledge, buyers often rely on a variety of reputation mechanisms associated with the seller to allay fears of risk and product quality. The following paper examines the effectiveness of reputation mechanisms (third-party seal, brand name, seller guarantee) on potential consumers' perceptions of a web-based business's reputation. Preliminary results of a small pilot study indicate that brand name may have the most impact on positively enhancing a web-site's reputation.

Introduction

While online buying may provide convenience, variety, and competitive pricing for a wide range of consumer products, fears about privacy, quality, and e-business legitimacy are often pervasive. Web based businesses not only have to contend to capture a significant market share in a forum where there are lower barriers to entry for competitors than in traditional markets, they also must develop new and innovative strategies to overcome the fear and distrust associated with online transactions.

Reputation serves as an indicator of the level of trust persons express in social and economic forums. Reputation is essentially defined as one's general opinion (Collin, 1992). This general opinion is often formed by past experiences and a "complex of meanings and relationships serving to characterize..." (Lindquist, 1975).

In the 1950's, researcher Kenneth Boulding theorized that perceptions of image (i.e. reputation) have an impact on human behavior due to man's inability to handle too many complex situations (Lindquist, 1975). Therefore, humans have a tendency to use symbolic images to summarize those situations (Lindquist, 1975). In this sense reputation becomes an umbrella term to summarize persons' salient beliefs about a company or its products.

This paper examines the application of various reputation mechanisms, such as third party seals, brand names, and seller guarantees on web-based businesses. We believe that these mechanisms may have a significant impact on potential customers' perceptions of the sites product quality and legitimacy. Section two provides a theoretical background on the use of various reputation mechanisms. Specific hypotheses are also presented in section 2. Section 3 describes the design of the experiment. Preliminary results are presented in section 4. A discussion of the results and future directions are explored in section 5.

Theoretical Background and Hypothesis Formation

Reputation can be viewed as a continuous Prisoner's Dilemma game (Fudenberg and Tirole 1991, Tullock 1997). In the Prisoner's Dilemma the payoff for defecting when the other party cooperates is very high. If this game were to be played only once then both buyer and seller would have an incentive to defect. However, in a continuous Prisoner's Dilemma the person who defects most of the time will become known to all for defection. Therefore everyone who deals with that person will also have an incentive to defect. Thus reputation is a judgement about future dealings based on past experience.

Klein points out that over time many mechanisms have been developed to help build a trust relationship between buyer and seller based on reputation (Klein, 1997). These mechanisms are intended to act as a surrogate for extended dealings between a buyer and seller. In this paper we explore three such mechanisms: 1) third party seals, 2) brand recognition, and 3) seller guarantees.

Reputation Management and Third Party Seals

Many current reputation management mechanisms for online buying rely heavily on customer reviews (e-bay, Go, slashdot, Third Voice) to rate the quality of the product and the seller (Nielsen, 1998). Some mechanisms also include reviews from third-party, independent (neither buyer nor seller) sources. An endorsement from a third-party can take various forms from written reviews on the third party site or a seal reflective of the third party approval rating placed on the seller site. Third party endorsement via seal, certificate, or degree is a prevalent system trusted by many in different aspects of society. The third part organizer or "knower organization" is an important link in the chain between buyers and sellers.
(Klein, 1997). The third party organization is often a well-known and well-respected organization (Consumers Union Underwriters Laboratory, Better Business Bureau, etc) in which the consumer has a high expectation of a fair and honest product evaluation (Klein, 1997). Consumer confidence in the knower organization's evaluation is amplified, because the third party organization often has no financial ties to the seller and therefore is perceived not to profit from a biased review (Klein, 1997). According to Silber, third party reviews have the potential to improve sales volume dramatically, or spell disaster for a company (Klein, 1997). For instance, both Maytag and Volkswagen have attributed some of their successful marketing to their favorable reviews in Consumer Reports (Klein, 1997). Additionally, over twenty percent of new car buyers consult Consumer Reports before purchasing a vehicle (Klein, 1997). This clearly indicates consumers willingness to put tremendous faith in third-party evaluation before making a purchase.

**Hypothesis 1:** The presence of a third party evaluation seal on a web-site will positively affect consumer perception of web-site reputability.

**Reputation Management and Brand Loyalty**

In traditional markets, reputation has been a valuable tool to distinguish one company from its competitors (Shenkar and Yaar-Yuchtman, 1997) and promote strong brand loyalty. Brand-names are often familiar symbols that reflect consumers levels of both direct and indirect experience with a product and its seller (Alba and Hutchinson, 1987). Familiarity engendered by a highly recognized brand name is noted to guide consumer attention (Alba and Hutchinson, 1987). Even when potential consumers are exposed to competitive advertising and therefore susceptible to "competitive interference effects" a well-known brand name possesses a considerable marketing advantage (Kent and Allen, 1994).

**Hypothesis 2:** Web sites with a well known brand name will positively affect consumer perception of reputability of the site.

**Reputation and Seller Guarantee**

Seller guarantees, particularly money-back, may also aid in developing trust in e-markets. Such guarantees provide a mechanism for extending the dealings between buyer and seller (Klein, 1997). Based on the Prisoner’s Dilemma, such extended dealings encourage both parties, but particularly sellers, to act honestly. Thus, consumer's may be more willing to purchase from a site if they are assured that a lack of satisfaction with product quality will not result in economic loss.

**Hypothesis 3:** The presence of a seller guarantee on a web-site will decrease consumer perceptions of risk in an e-commerce transaction.

**Experiment Design**

The preliminary experiment was constructed within the framework of a 2X4 factorial design. The two primary independent variables are Brand Name Site, and Unknown Site. There are four treatment levels for each independent variable; BBB Online Seal, Faux Seal (created by researcher), No Seal, and Money Back Guarantee. The dependent variables are consumer's perceptions of web-site reputability, and consumer's perceptions of site shopping risk.

**Measures**

Perceived reputation assessment and web-site shopping risk attitude assessment measures were modeled after questionnaire items provided by Jarvenpaa et.al. in their work on cross-cultural validation of consumer trust in Internet stores (Jarvenpaa et al., 1999).

**Experiment Procedures**

A pilot study was conducted in order to validate measures and instructions. Pilot subjects were asked to complete a short demographic survey before beginning the experiment.

After completion of the survey, subjects were asked to view 15 web-site homepages of online bookstores. All experimental homepages were constructed from an identical template, and varied only on the dependent variables (Brand Name/Unknown Name) and treatment levels (BBB online, Faux seal, no seal, seller guarantee). Seven placebo pages differing in surface design principles only (color, font, etc.) were interspersed with experiment pages. Pages were not displayed in a random order. However, during the actual experiment, all web-pages will be generated randomly, or presented in a pseudo random order. Participants were then asked to fill out an assessment questionnaire for each homepage.

**Subjects**

For the pilot study subject were recruited from a pool of graduate assistants in the information systems department of the University of Maryland, Baltimore County. Additional volunteers from the University of Maryland at Baltimore school of experimental medicine also participated. Students were selected based on convenience and willingness to participate. Four students were used in the pilot study.

The full-scale experiment will occur in the Spring 2000. Subjects will be recruited from a pool of undergraduate and graduate information systems students taking electronic commerce and systems analysis and
design classes. The experiment will use approximately 80 subjects.

**Preliminary Findings**

Survey results and anecdotal evidence gathered during a discussion session with pilot participants suggests that brand name is the most important factor in establishing a positive reputation when persons view an online shopping site, while the presence of a third-party seal made little or no difference. The effectiveness of a third party seal is greatly impacted by the seals and "knower" organizations ability to be recognized by the consumer. The ability for a seller guarantee to decrease risk perception is as yet unclear.

Several issues arouse from the pilot study that will be addressed before the final experiment is launched:

- **Seal placement** - Some participants asserted that seal placement directly underneath the site name drew more attention to the name rather than the seal itself
- **Seal Information Availability** - Another participant commented that the appearance of the seal may have made a difference if she was able to click on the seal and receive information about the seals purpose and intent to convey quality.
- **Design Issues** - A participant commented that the titling of the unknown site seemed incongruent with the rest of the homepages bearing the brand name logo (Amazon.com).

**Discussion and Future Directions**

Establishing a positive reputation for quality and allaying consumer fears is integral to the success of a web-based business. Based on the small sample used in the pilot study, no conclusions as to the hypotheses proposed could be made. However, if the pilot results hold true for the full experiment then third-party seals are ineffective at helping to facilitate trust between buyers and sellers and hypothesis one is not supported. In this case a web-based business may re-consider the necessity of paying a knower organization for evaluation, critique, and favorable standing.

It appears that hypothesis two will be supported. In which case, resources should better be allocated to more rigorous advertising in order to build brand recognition for the site. Additionally, seller guarantees may need to be broken down into further categories (money back, hassle free return, satisfaction, safe shopping etc.) in order to study whether different types of guarantees are more effective at reducing risks. In the future studying a combination of treatment variable (guarantee + seal, more than 1 seal, seal + privacy pledge, etc.) may yield further insights into consumer perception of site reputation and shopping risk.

**Bibliography**


