Exploring the Role of Privacy Programs on Initial Online Trust Formation

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Abstract

Little research has been done on the complex relations between different actors in the development of Internet consumer's initial trust toward an unknown Web site. With social network analysis, we have built a conceptual model and developed research hypotheses based on the theory of strength of weak ties. Empirical study is outlined and potential problems are described.

Introduction

Organizations have been initiating various solutions for Internet users' privacy concern when these users conduct online transactions. Government agencies such as US Department of Commerce have implemented privacy regulations and laws. Industry associations have built technical frameworks like Privacy Preferences Project (P3P) from W3C.org. Online businesses have also developed different privacy programs. We define privacy program as any rule, tool, and mechanism by which a web site helps consumers to identify the web site's concern for consumer privacy, to check the web site's reliability, and to evaluate the web site's trustworthiness. While Web sites like Amazon.com have only self-regulation statements and notices, other Web sites like eBay.com have integrated privacy programs such as self-regulation statements, consumer feedback forum, escrow service, and assurances from third party organizations.

Fig 1 is a diagram showing interactions among various actors involved in an online transaction. There are three types of actors involved in the model: a consumer, a Web site, and third parties. The consumer is the Internet user who is going to do online transactions. The Web site is a business site that supplies a certain type of service. The third parties are any other Internet users or organizations that are referred by the Web site. Researchers have investigated the role of different privacy programs in consumer's trust toward an unknown Web site. Resnick et al. (2000) investigated feedback forum as a mean for potential consumers to look at peer consumers' past experience; Benassi (1999) and Nöteberg et al. (1999) studied the influence of third-party icons like TRUSTe on the likelihood of consumers' purchase. McKnight et al. (2000) also generalized the effect of third-party referrals based on the model of initial trust formation (McKnight et al. 1998).

Previous studies have not viewed the complex social relations between the three types of actors shown in Fig 1. We have not seen any conceptual and empirical studies showing the effect of the social relations and the interplay of these relations on trust development. Little research has been done on the effect of the strength of the relations between those actors. One exception is Stewart's study (1999) on the transference of trust, which is based on cognitive balance theory (Heider 1958). However, this theory assumes a strong relation between the consumer and the third party, and another strong relation between the Web site and the third party, which is not always true for the relations between the three types of actors.
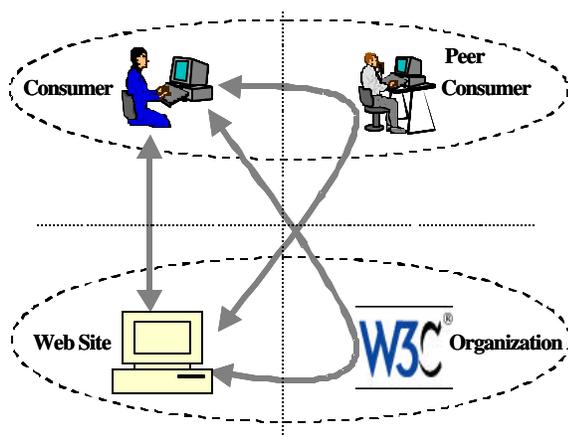

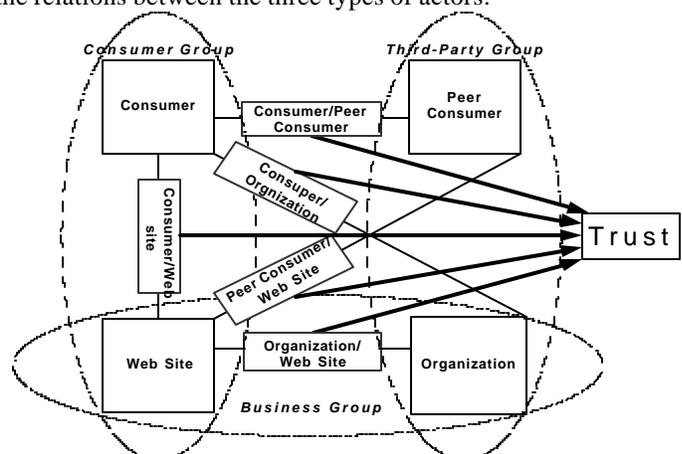Fig. 1. Interactions among actors in online transaction

Fig. 2. A conceptual model for online trust formation

The present study adopts the embeddedness position taken by Granovetter (1985) who emphasized the role of "personal relations and structures (or 'networks') of such relations in generating trust…" (p.490). According to Granovetter, social relations are more responsible for generating trust than "institutional arrangements or generalized morality" (p.491). Using social network analysis method, this study will investigate how the strength of relations between the three types of actors affects Internet consumers' initial trust.

Background

Granovetter's Strength of Weak Ties Theory (1973) proposed that the degree of two individuals' friendship networks is related to the strength of the tie (relation) between them. The strength is a function of the amount of time, emotional intensity, intimacy, and reciprocal services between the two actors, which can be interpreted as

$$\texttt{Strength} = f(\texttt{time}, \texttt{intensity}, \texttt{intimacy}, \texttt{reciprocity})$$

Based on different combinations of time, emotional intensity, intimacy, and reciprocity, the strength might vary from strong to weak. Strong ties share many, frequent and intimate exchanges while weak ties involve fewer, occasional and less intimate exchanges. "This overlap in their friendship circles is predicted to be least when their tie is absent, most when it is strong, and intermediate when it is weak" (Granovetter, 1973 p. 1362). This assertion illustrates the innate relationship between trust and the strength of ties. Other social relation scholars also agree that individual behavior is affected more by the relations in which the individual is involved than by the individual's norms and attributes (e.g., Lewicki and Bunker 1996).

Research Model and Hypotheses

Fig 2 shows a conceptual model we have developed to describe the complex relationship between social relations and trust formation. There are three groups of actors in the model: consumer group, third-party group, and business group. Consumer group includes a consumer and peer consumer(s). Third-party group includes peer consumer(s) and referral organization(s). Business group includes the Web site and organization(s). We will focus on three social relations between them, a dyadic relation---consumer/Web site, a triadic relation of consumer/peer consumer and peer consumer/Web site, and another triad of consumer-organization and organization-Web site.

The Dyadic Relation Between Consumer and Web site

The dyadic relation between the consumer and the Web site without any third-party referral is private (Burt and Knez 1996). Initially, there is no tie. Trust is very limited because of the absence of interaction history between the two actors. The Web site might specify its privacy regulation and rule in self-guaranteed statements (McKnight et al. 1998).

Hypothesis 1. When initially going to an unknown Web site, a consumer will have more trust toward the Web site with privacy policy programs than the Web site without privacy policy programs, controlling other factors constant.

The Triadic Relation with Third Party as Intermediary

Trust is rarely private but embedded by third parties (Burt and Knez 1996). Third parties build alternative ties between the consumer and the Web site. If the consumer trusts the third party and there is a strong tie between the Web site and the third party, the trust can be transferred (Heider 1958). However, balance theory cannot explain the weak tie issue. Granovetter (1973) proposed that weak ties allow information diffusion from one group to another in a social network. Hence, a weak tie between a consumer and a third party enables the flow of information about the unknown Web site. The information might be about the Web site's competence, benevolence, and integrity and thus influence trust (Mayer et al. 1995). A weak tie at least enables some degree of transference of trust from a third party.

Hypothesis 2.a. When initially going to an unknown Web site, a consumer will have more trust toward the Web site with a known third-party referral than the Web site with no or unknown third-party referral, controlling other factors constant.

Further, if the third party is unknown to the consumer, this is the same as the dyadic relation between the Web site and the consumer as described above.

Hypothesis 2.b. The degree of trust belief is not different between the Web site with unknown third-party referral and the Web site with no third-party referral, controlling other factors constant.

The Prestige of Unknown Web Site

Prestige measures the prominence or importance of an actor in a social network. A prestige actor is the recipient of ties (in-degree). We propose that the degree of prestige of a Web site will influence the consumer's trust belief. We use degree centrality, the number of ties directed to an actor, to measure prestige. High degree centrality indicates high reputation.

Hypothesis 3. When initially going to an unknown Web site, a consumer will have more trust toward the Web site with more third-party referrals than the Web site with fewer third-party referrals, controlling other factors constant.

3.3 The Distance Between Consumer and Third Party

Distance (Euclidean distance), the length of the shortest path between two members in the network, is a measure of the closeness of members within a group. We argue that the distance between a consumer and a peer consumer is closer than that between the consumer and a third-party organization. The consumer tends to share more common norms, values, and

goals with peer consumer(s) than with organization(s). A reasonable consumer will cognitively categorize her/him into consumer group and perceive a higher intimacy towards peer consumers, which leads to a strong tie.

Hypothesis 4. When initially going to an unknown Web site, the consumer will have more trust toward the Web site with other consumers as third-party referrals than the Web site with organizations as third-party referrals, controlling other factors constant.

The Symmetry Between Web Site and Third Party

If consumers find a third-party referral on the unknown Web site, they might go to the third party's Web site to check. If the third-party's Web site also refers the unknown Web site, the tie is symmetric. Otherwise, the tie is asymmetric. Asymmetric relation is an intermediate state of relationship that will move towards more stable, reciprocal, and mutual relationship (Heider 1958). Granovetter (1973) also proposed that high reciprocity lead to strong tie. The relationship between a Web site and an assurance organization is symmetric because the assurance company has an online auditing document for the Web site.

Hypothesis 5. When initially going to an unknown Web site, a consumer will have more trust toward the Web site if the Web site and the third-party organization refer each other mutually than the Web site is not referred by the third-party organization, controlling other factors constant.

Research Method and Design

We will conduct a laboratory experiment for this study. The experimental task is to buy a laptop computer from virtual stores. We are going to measure subjects' perception of the trust toward these sites. Within-subject experiment design will be adopted to control the variability of subjects' trust disposition. 150 students from a public university will be recruited

The virtual Web sites will follow the typical style of online stores. General features of online e-stores will be maintained across different Web sites. To test our hypotheses, we will modify the content of those Web sites. Students will be instructed on how to shop for the computer. They will have enough time to experience the difference of Web sites. After doing the shopping, they will evaluate their trust perception for each Web site based on a 1-7 Likert scale.

Conclusion

We have contributed to online trust research by building a model showing how privacy programs are different in terms of the social relations between different parties. Further, we have made explicit how social relationship influences the formation of trust in a framework, which has not been done before. We have investigated the role of different types of privacy programs in the initial online trust formation. Relevant hypotheses are proposed.

However, the potential problem with our study is the uni-dimensional treatment of trust. We agree with the notion of multidimensional trust. Our empirical result might be biased because of uncontrollable factors. To increase the validity of the study, we will conduct a field study in the future and introduce new mechanisms to cater for the multidimensional issue.

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