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THE ROLE OF NEGOTIATION IN PRIVACY-ENHANCED E-COMMERCE TRANSACTIONS

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ABSTRACT

Online vendors use personal information to deliver customized services efficiently to their customers. Both users and vendors value the relationship building made possible using personal data. However, the use of personally identifying data gives rise to the potential for privacy invasion. When consumers must disclose personal information, they are forced to perform a risk-benefit analysis in which the risks of disclosing one's personal information are weighted against the potential benefits of the disclosure. While some researchers note that consumers maximize benefits in deciding whether to disclose personal information, others argue that consumers lack sufficient information and power to make educated, balanced decisions regarding disclosing their private information. We add to the privacy discussion by arguing that a real negotiation position for both parties can help realize the full benefits of online personalization. We propose a model for mitigating the tension between the benefits of personalization and the risks to privacy invasion. This framework informs our future work which seeks to develop rich and deep understandings of negotiated, privacy-concerned personalization.

Keywords

Privacy, personalization negotiation, bargaining, game theory, decision theory, auction theory, e-commerce

INTRODUCTION

E-commerce has made it possible for vendors to provide personalized, online services to their valued customers. Not only does the Web enable a virtual replication of the old fashion, customized market where every customer who walked through the door of the brick and mortar market was recognized by the vendor, but it also promises a more effective form of personalization. For the customer the benefits of customization include: convenience of reduced transaction time for future transactions, financial reward offers, and discount offers. For the vendor personalization provides benefits such as: repeat customers, customer loyalty, and cross-selling (Chellappa and Sin, 2005). This level of personalization is not restricted to only a few industries or specialized web sites. Web sites ranging from those supporting financial services organizations (e.g., CapitalOne) to social networks and blogs can be enhanced to provide personalized services; Wind (2001) suggests that companies risk losing to the competition if they fail to provide such services.

Both users and vendors value the benefits that gathering personal data engenders. However, the use of personally identifying information by vendors gives rise to the potential for privacy invasion. The current privacy literature suggests that there is a tension between the benefits of personalization and the risks associated with privacy invasion (Metzger, 2007). When consumers make an information disclosure decision, they may perform a risk-benefit analysis in which the potential risks of disclosing one's personal information are weighted against the potential benefits of disclosure (Hui, Teo and Lee, 2007; Kobsa, 2007; Metzger, 2007). While some researchers claim that consumers maximize the benefits when deciding whether to disclose private information (Hui et al., 2007; Metzger, 2007), others assert that consumers lack sufficient information to make informed decisions regarding information privacy (Kobsa, 2007).

E-commerce transactions that exchange a product or service (the first exchange) whose attributes are pre-specified, as well as personal information (the second exchange) appropriately bargain on the price of the product or service however, there is little or no bargaining on the second exchange. Customers are usually required to provide personal information in order to complete the transaction. This creates an asymmetric distribution of power (Dwyer and Walker, 1981) in favor of the vendor with respect to second exchanges. Where privacy invasion is a concern, consumer negotiating options are limited to providing erroneous personal information or abandoning the transaction and possibly seek out alternative (substitute) product or services from a competitor (i.e. a vendor with lesser disclosure requirements). In such situations, neither the vendor nor the consumer enjoys the benefits of online relationship building that the exchange of personal data proffers. To resolve this imbalance, we posit that a real negotiation position for both parties can help realize the full benefits of online personalization for e-commerce transactions.

The rest of the paper is organized as follows. We discuss related privacy studies and negotiation in the next section. Next, we discuss the role of negotiation in privacy-enhanced, e-commerce transactions. We then present a framework that informs our future work in negotiated second exchanges for e-commerce transactions. We then conclude the paper.

RELATED STUDIES

Privacy

Smith, Milberg, and Burke (1996) developed an information privacy instrument which was empirically validated by Stewart and Segars (2002). The instrument which measures individuals' concerns for organizational information privacy practices consists of four dimensions: collection, errors, unauthorized secondary use, and improper access.

Current privacy literature recognizes the conflict that arises between the potential benefits of personalization to the user/consumer and the risk of privacy invasion resulting from divulging that personal information in e-commerce transactions (Metzger, 2007). Kobsa (2007, p26) calls this conflict "the privacy calculus." Kobsa observes that users lack sufficient information to be able to make educated, privacy-related decisions asserting that users often underestimate the probability of being identified if they disclose certain data, and that they are unfamiliar with privacy practices since privacy statements can be difficult to understand. Hui, Teo and Lee (2007) use contemporary choice theory to explain the discord between privacy and personalization. Contemporary choice theory assumes that people make choices by maximizing a multiattribute utility function (Ben-Akiva and Lerman, 1985; Luce, 1959; McFadden, 1986). These attributes may be economic (e.g., money, time) or psychological (e.g., pleasure, risks) and can be compensatory such that the utility of a desirable attribute may be offset by the disutility of an undesirable attribute (Hui et al., 2007, p.21). Recently, a second theory, the communication privacy management theory (CPM), has been employed to explain the tradeoffs between privacy and information disclosure (Metzger 2007). CPM, a rule-based theory, posits that the best way to protect personal privacy is by developing rules to assist decision makers about whether to reveal or conceal private information.

A number of studies have identified several variables that influence consumers' intention to disclose and the actual disclosure of private information. These variables include: personality; culture-based privacy attitudes; type of information to be disclosed and its deviance from the average; the credibility of the recipient; the consumer's perception of the value of personalization and monetary incentives; as well as the extent to which users know what information has been disclosed, and the extent to which they can control its usage (e.g., Hann, Hui, Lee and Png, 2002; Kobsa, 2007; Milne and Gordon, 1993). Surveys show that generally users feel different about the disclosure of various types of information. The presence or absence of trust in a vendor's Website affects people's motivations to disclose personal information (Hui et al., 2007), and antecedents to this trust have been shown to include: a positive past experience, the design and operation of website, the reputation of website operator, the presence of a privacy statement, and the presence of a privacy seal (Kobsa, 2007).

Negotiation

Negotiation is defined as an iterative communication and decision making process between two or more parties who exchange information comprising offers, counter-offers and arguments; deal with interdependent tasks; and search for a consensus or compromise decision (Bichler, Kersten and Strecker, 2003). The outcome of a negotiation is therefore a compromise (i.e. an agreement) or an impasse (a failure to reach agreement) (Bichler et al., 2003). In either case, negotiations follow rules which are explicitly specified. The term negotiation is sometimes used synonymously with bilateral bargaining in contrast to auctions (Bulow and Kelemperer, 1995); this is particularly so in the game-auction-theoretic streams of economic research. In e-commerce research, this has resulted in a view of negotiations that is predominated by the auction approach that sees every structured message exchange as an auction (Wurman, Wellman and Walsh, 2001).

While traditional auctions are resource allocation mechanisms centered on a competitive bidding over a single issue (i.e. price) for a single, well-defined object and involve a “set of auction rules that specify how the winner is determined and how much he has to pay” (Wolfsetter, 1996), negotiations are often much more complex. These “traditional” negotiations are based on bilateral/multi-lateral/ multi-bilateral processes over a single or multiple issues of one or more well/partially/ill-defined objects, and involve cooperation and/or competition among the negotiating agents. The processes focus on the underlying objectives instead of price as an indicator of preference. Bilateral bargaining involves two parties who compete or cooperate in order to achieve a compromise (Bichler et al., 2003).

With e-negotiations (i.e. negotiations that take place via electronic media), four formal approaches have been used: decision theory, game theory, negotiation analysis and auction theory. These approaches provide a basis for e-negotiation protocols and their media (Bichler et al., 2003). These theories focus on several different perspectives, including the relationship between the individual and social characteristics of the negotiation process and its outcomes, communication patterns, cognitive biases, interpretations and misinterpretations, and the relationships between individual characteristics and the process (Bichler, 2001).

THE ROLE OF NEGOTIATION IN E-COMMERCE TRANSACTIONS

Although both users and vendors value the benefits of personalization in e-commerce (Kobsa, 2007), the collection and use of personally identifying information by vendors puts users at risk of privacy invasion. Invariably when consumers are required to disclose personal information they perform a risk-benefit analysis in which the risks of disclosing one's personal information are weighted against the potential benefits of the disclosure (Metzger, 2007). However, since e-commerce transactions allow for bargaining on the price of the product and not on the second exchange, consumers lack sufficient power to make balanced decisions regarding the disclosure of private information (and indeed lack the information to make educated decisions). Customers resorting to providing erroneous personal information or abandoning the transaction hinders the realization of the benefits of personalization. In this paper we propose that the tension between the realization of the benefits of personalization and the risks associated with privacy invasion (Acquisti, 2004; Hann et al., 2002; Kobsa, 2007; Metzger, 2007; Westin, 2003) can be moderated by negotiation.

Of particular interest in this paper is the negotiating position confronted by many consumers in e-commerce where they are required to disclose private information in order to acquire a desired product or service (the first exchange). Take the general case where product A is sold by one or more vendors that require private information to be disclosed by the consumer in order to procure product A; the absence of a real negotiating position distorts the cost-benefit valuation that the consumer has to make. The distortion increases in cases where the customer strongly desires the product. In this situation, the consumer has little or no negotiating power with respect to disclosing private information (regardless of whether the potential personalization benefits are themselves desirable to the consumer) other than to search for a vendor requiring less private information (or deemed less private), falsify the requested information, or go without the product. In any event, the benefits of personalization go unrealized. One potential solution is to negotiate a compromise position suitable to both parties. Personalized websites should be designed in a way that enables consumers to negotiate the extent of information disclosure given their privacy preferences. An effective design of such systems requires a theoretical understanding of the relationship between personalization, privacy and the nature of negotiation.

Negotiation theories and particularly formal approaches that have been used in e-negotiation i.e. decision theory, game theory, auction theory, and negotiation analysis (Bichler, 2001; Bichler et al., 2003) can be used to develop competing models of negotiated outcomes in the personalization-privacy invasion dyad.

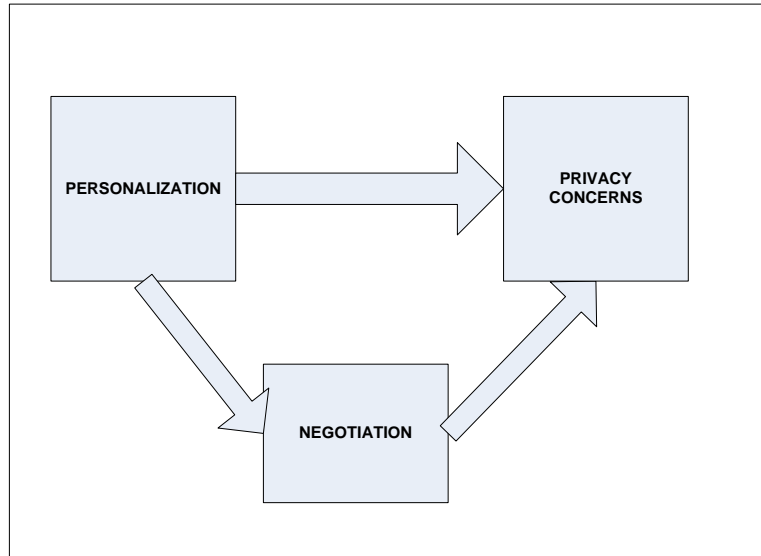


Figure 1 Negotiated Privacy-Enhanced Exchanges

Figure 1 shows how negotiation can moderate the relationship between personalization and privacy invasion. We seek to examine the relationship between the value of personalization and privacy concerns. We also investigate how negotiation moderates the relationship using alternative formal approaches to e-negotiation. Figure 2 depicts the generalized attributes of privacy-enhanced exchanges proposed in this paper. The privacy concern construct is operationalized as having four dimensions: collection, error, unauthorized secondary use, and improper access (Smith et al., 1996; Stewart and Segars, 2002). From the literature, personalization is frequently described by enumerating the various ways in which web sites and services are customized for profiling individual users to build ongoing relationships with the user.

In our model we propose that the personalization variable has the following dimensions: (1) Different types of consumers i.e. privacy pragmatists, privacy unconcerned, and privacy fundamentalists (Westin, 2001). (2) The type of information collected e.g. anonymous, personally identifying information, personally non-identifiable information (Chellappa and Sin, 2005). (3) The nature of the vendor e.g. the perceived trustworthiness, prior experience with the vendor. (4) Types of services or products e.g. luxury, financial, informational, medical, entertainment, and community services. (5) Nature of benefits (real or perceived) e.g. convenience, cross-selling, customer retainment, discounts and rewards (Chellappa and Sin, 2005).

The four different formal approaches to e-negotiation offer different ways of capturing and structuring the privacy-enhanced exchanges. The differences in the underlying assumptions of each together offer the potential to develop rich and deep understandings of negotiated privacy-concerned personalization. For example decision theory and game theory make rationality assumptions about the actors, whereas with auctions and negotiation analysis rationality is not a necessary component.

PERSONALIZATION	NEGOTIATION	PRIVACY CONCERNS
Type of consumer	Decision theory	Collection
Types of information collected	Game theory	Error
Nature of the Vendor	Auction theory	Secondary Use
Types of services/products	Negotiation analysis	Improper Access
Nature of Benefits		

Figure 2 Attributes of Privacy-Enhanced Exchanges

CONCLUSION AND FUTURE WORK

In this paper we propose a model for mitigating the tension between the benefits of personalization and the risk to privacy invasion. Our model envisages the use of negotiation as a moderator between privacy concerns and personalization. Our work adds to the privacy discussion by arguing that a real negotiation position for both vendors and consumers can help realize the full benefits of online personalization. We are working to develop this framework further through experimental, survey, and field studies. This involves refining and validating the generalized attributes presented in Figure 2. We propose a model for mitigating the tension between the benefits of personalization and the risks to privacy invasion. This framework informs our future work which seeks to develop rich and deep understandings of negotiated privacy-concerned personalization.

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