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VALUE FOCUSED ASSESSMENT OF INDIVIDUAL PRIVACY CONCERNS FOR INTERNET COMMERCE

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Abstract

This paper presents preliminary findings from an empirical study to assess individual privacy concerns for Internet commerce. Using Keeney's (1999) value-focused thinking approach, 92 individuals with prior Internet shopping experience were interviewed from across the United States and the United Kingdom. Data from the interviews was used to identify eight fundamental and 20 means objectives that are essential for protecting individual privacy in the context of Internet commerce. The findings help in developing a framework to ensure privacy of individuals and provide a basis for an instrument to measure privacy concerns when shopping online.

1 VALUE-FOCUSED ASSESSMENT OF PRIVACY CONCERNS

Assessing the value of individual privacy for Internet commerce has been a concern of many researchers. Some have considered *process fairness* as an adequate means for ensuring individual privacy (e.g., Milne and Gordon 1993). Others have considered constraining *unauthorized secondary use* as a useful mechanism for protecting privacy. More recently, many researchers have been informed by information security principles of confidentiality, integrity and availability as suitable means to protect individual privacy (e.g., Dhillon and Backhouse 2000). Clearly individual privacy concerns for Internet commerce are not a uni-dimensional construct and there is a need to consider the various dimensions of privacy as it relates to Internet commerce. Although for traditional firms Smith, et al. (1996) identify collection, unauthorized secondary use, improper access, and errors as important aspects of individual privacy, there is a need to examine the issues in the context of Internet commerce (cf. Culnan and Armstrong 1999). In context of this research, our intent is to examine the values individuals have with respect to maintaining privacy when engaging in Internet commerce.

In understanding the notion of value of individual privacy for Internet commerce, two classes of definitions need to be understood. The first relates to the notion of *value proposition*, as proposed by Keeney (1999). The second relates to individual privacy concerns for Internet commerce. Values, according to Keeney (1992), are principles that an individual might adhere to. Particular situations, actions and inactions are then evaluated in light of these principles. With respect to individual privacy concerns for Internet commerce, the value proposition can be defined as the net benefit and cost associated with letting go of one's privacy when purchasing online, relative to other means of shopping. The intent behind value-focused thinking is to consider activities that occur prior to a decision problem being solved. The approach, therefore, helps in uncovering hidden objectives (Keeney 1994). The second class of definitions relates to individual privacy concerns for Internet commerce. We term this concept *Internet*

commerce privacy, which is the ability of the individual to exercise control over the disclosure and subsequent use of their personal information. Although most individuals are aware that some sort of personal information is being collected, the unauthorized intrusion to collect and use personal data marks the beginning of privacy infringement. In the context of our research, it is important to understand and identify a range of individual values with respect to informed consent, process fairness, and unauthorized use that organizations need to recognize if they are to be successful in the conduct of Internet commerce and be socially responsible toward individual privacy concerns. The objective of this research, therefore, is to elicit such individual values that would form the basis for developing privacy objectives for companies involved with Internet commerce.

This paper is organized into three sections. Following a brief introduction, which systematically positions the nature and scope of this research, section two presents the methodology used to collect values attached to individual privacy concerns. Section three presents a brief discussion, conclusions, and future research directions.

2 METHODOLOGY

Methodologically this research is based on Keeney's (1992) *value thinking approach*. According to Keeney, most decision-making situations are based on identifying alternatives, where the choice of a given alternative is based upon a limited set of available options. The available options are constrained by a range of external and internal factors as well as a limited list of alternatives to begin with. Furthermore there are limits imposed by the decision makers in the process of identifying constraints and subsequently alternatives. This results in individuals forgetting what they really want to achieve. Since we engage in a decision-making situation largely because we want to achieve our objective, Keeney calls upon engaging in value-focused thinking as a means to remain focused on the bottom-line objectives, which make decisions meaningful and of value, instead of making choices among current alternatives. Keeney's value focused thinking approach helps to address the most fundamental question: What do we want to do and why? Value-focused thinking has been used in a wide variety of decision contexts to expose underlying values (e.g., Keeney 1999; Torkzadeh and Dhillon 2002). The inherent argument in Keeney's value-focused thinking approach is to be proactive and hence create more alternatives instead of being limited by available choices.

The process of value-focused thinking proceeds in three steps. Step one involves eliciting the values. This is usually undertaken by conducting in-depth interviews to identify what respondents value and wish to achieve in a given decision context. Step two involves conversion of each of the values identified in step one into a common form and then converting them into a corresponding objective. Following Keeney, an objective is constituted of an object and a directional preference. Various interviews usually generate a large number of similar values and corresponding objectives. Step two also involves removing redundancy. Step three involves establishing a means-ends network of objectives. While constructing this network, objectives identified in step two are classified into two categories and then relations between them are postulated. As suggested by Keeney, classification of objectives into means and fundamental categories follows the systematic application of the "Why is this important?" (WITI) test. In the context of our research, the three-step method is applied in order to assess values attached to individual privacy concerns when engaging in Internet commerce. A total of 92 interviews across the United States (55 interviews) and United Kingdom (37 interviews) were conducted. All respondents had significant experience in Internet commerce related activities (e.g., shopping, seeking information, research, etc.). Each interview lasted approximately 40 minutes. Interviewees were asked to comment on what was really important to them when they think about privacy and shopping online. This was followed by a number of probes that were used to get information on various aspects of privacy concerns related to Internet commerce. A similar approach was adopted by Keeney (1999) in his research to understand the value of Internet commerce to the customer.

Eliciting individual values. Clearly the best way to find what individuals want with respect to privacy in the context of Internet commerce is to ask them. It is also better to ask a large number of people in different ways since people value different things and express them in a variety of ways. There is, however, a problem with the latency of values. In many cases, values are hidden and Keeney recommends several stimulation techniques to surface the latent values. In the context of our research, we chose a combination of two techniques. First we asked the respondents to create a wish list. Each interviewee was asked to identify what they wished in terms of maintaining privacy when engaging in Internet commerce. Second, we probed the respondent for each of the wishes. Several probing questions were prepared prior to the interview. The probes included questions such as:

- If you did not have any constraints, what would your objectives be?
- What needs to be changed from the status quo?
- How do you evaluate the level of privacy offered by a given Internet commerce company?
- What do you expect from the Internet commerce company?
- How do they tell if the privacy is good or bad?

Besides asking the interviewees to generate a wish list, we also asked them to generate a list of problems and shortcomings in ensuring privacy. The basic idea behind asking problems and shortcomings was to generate objectives by articulating their concerns. The 92 interviews in the United States and United Kingdom generated 413 wishes, problems, and concerns.

Developing objectives. Each of the values identified in the previous step were then converted into objectives. First, all of the 413 wishes, problems, and concerns were converted into a common form. This step involved systematically reviewing each of the responses and restating in a common language. There is a risk of introducing one's own values and judgments in the conversion. Extra care was taken, however, with each researcher reviewing the other's work. The conversion of initial values into common form helped in identifying repeated values. After taking care of the redundancy problem, a total 324 values were identified. This list of values was further worked upon to develop objectives, using a verb (direction of change) plus an object (target of change) format. Some statements on the list were compound sentences, which produced more than one objective. Once again we looked for redundancy and removed multiple cites of the same objective. To eliminate these ambiguities and redundancies, the three researchers reviewed each item on the list independently. This review and refinement produced 94 objectives in a common form of a verb plus an object.

In ensuring individual privacy, respondents wanted to achieve these 94 objectives. A number of objectives, however, seem to address a similar issue. Following Keeney, we clustered objectives into groups. In a final synthesis, 28 clusters of objectives were developed. The 92 interviews across the two countries helped in developing these objectives. Keeney refers to the process of developing and clustering objectives as a means of adequately articulating values and surfacing the meanings.

Organizing objectives. The 28 clusters of objectives developed are then classified into two categories: means and fundamental objectives. The criteria used for the classification is to assess if an objective is an intermediate one or of a more fundamental nature. Keeney proposes the use of the WITI test where the question "Why is this important?" is repeatedly asked. If the answer to the question suggests another objective, then it is not a candidate for a fundamental objective. Careful review of all of the objectives and the corresponding clusters resulted in eight fundamental and 20 means objectives. The fundamental and means objectives are presented in Tables 1 and 2 respectively. Finally the objectives are organized in a means-ends relationship diagram. The means-ends network is presented in Figure 1.

3 CONCLUSIONS AND FOLLOW UP STUDY

The means and fundamental individual privacy objectives represent a value model. The purpose of this model, like most models, is to gain insight into a complex situation and thereby complement intuitive thinking (Keeney 1992, p. 130). In particular, the value model can facilitate thinking about creating new privacy policies related to Internet commerce and reconfiguring current privacy policies. Consistent with Keeney, new policies can only be developed if there is an adequate gap between actual and perceived. It will also be useful to assess differences in values when purchasing online or offline. If, for instance, one is able to identify a suitable opportunity to increase the value proposition for a given privacy objective, it suggests the possibility of developing a new relevant privacy policy. Drawing an example from this research, one could argue that improving privacy guarantees by Internet commerce companies would help in decreasing customer responsibility for maintaining personal privacy, thereby maximizing privacy of personal information. This would build confidence in individuals to engage in online shopping. The value model can also help in improving/reconfiguring an existing privacy policy. Improvements can be brought about by carefully considering objectives along which Internet commerce privacy is underperforming. For instance an organization can assess the extent to which customer records are kept after the transaction has been completed since achieving this objective would help in minimizing shopper profiling, thereby maximizing Internet commerce privacy. Clearly a focus on the value propositions defines the nature and scope of reconfiguring current privacy policies and practices.

We are encouraged by the findings of this study and intend to proceed with the follow-up study with the following specific goals: (1) develop a final definition for each construct, and (2) generate measures representing these factors, gather data for psychometric analysis of measures, and recommend a measurement for Internet commerce privacy that is reliable and valid.

Table 1. Means Objectives

<p>Increase security of payment method <i>Example:</i> Maximize transaction security</p>	<p>Minimize the use of customer “lists” <i>Example:</i> Maximize protection of shoppers’ personal information from telemarketers</p>
<p>Maximize protection of financial information <i>Example:</i> Disallow other companies’ access to customers’ credit card details</p>	<p>Minimize profiting from customers’ personal information <i>Example:</i> Disallow sale of personal information to other companies</p>
<p>Ensure buyer anonymity <i>Example:</i> Ensure a discreet shopping experience</p>	<p>Minimize post-transaction recordkeeping <i>Example:</i> Minimize post-transaction interaction</p>
<p>Minimize collection of information unrelated to the transaction <i>Example:</i> Minimize retailers’ need to know personal details</p>	<p>Increase the strength of encryption <i>Example:</i> Ensure secure communications</p>
<p>Increase respect for the customers’ data <i>Example:</i> Ensure customers’ information is not commoditized</p>	<p>Enhance customer ID verification <i>Example:</i> Ensure adequate purchaser authentication</p>
<p>Ensure e-mail address confidentiality <i>Example:</i> Ensure e-mail address confidentiality</p>	<p>Increase customer awareness of how personal information is handled by retailer <i>Example:</i> Increase awareness if retailer sharing personal information</p>
<p>Stop shopper profiling <i>Example:</i> Minimize use of cookies</p>	<p>Increase privacy policy awareness <i>Example:</i> Maximize visibility of privacy policy</p>
<p>Increase system security strength <i>Example:</i> Ensure confidentiality of data</p>	<p>Understand the magnitude of customers’ privacy fears <i>Example:</i> Understand customer concerns about the theft of their information</p>
<p>Improve privacy guarantees <i>Example:</i> Provide monetary restitution for privacy breaches</p>	<p>Decrease customer responsibility for privacy problems <i>Example:</i> Increase firms’ responsibility for problems created by lack of privacy</p>
<p>Stop sharing customer information <i>Example:</i> Minimize exposure of information to other retailers</p>	<p>Improve the method of payment <i>Example:</i> Provide the ability to pay by swiping credit card on computer</p>

Table 2. Fundamental Objectives

<p>Overall Objective: Maximize privacy when purchasing online</p>	
<p>Maximize discreetness of transactions <i>Example:</i> Ensure a discreet shopping experience</p>	<p>Maximize security of personal information <i>Example:</i> Ensure confidentiality of personal information</p>
<p>Increase prevention of fraud <i>Example:</i> Emphasize prevention of identity theft</p>	<p>Maximize shoppers’ ability to control personal data <i>Example:</i> Provide option to opt-out</p>
<p>Maximize reputation of firm <i>Example:</i> Emphasize trust in the retailer</p>	<p>Maximize expectation of shopping privately <i>Example:</i> Ensure privacy protection becomes an accepted norm</p>
<p>Decrease spam <i>Example:</i> Minimize potential for spam</p>	<p>Maximize privacy relative to ease of online shopping <i>Example:</i> Ensure privacy is consistent with speedy service</p>

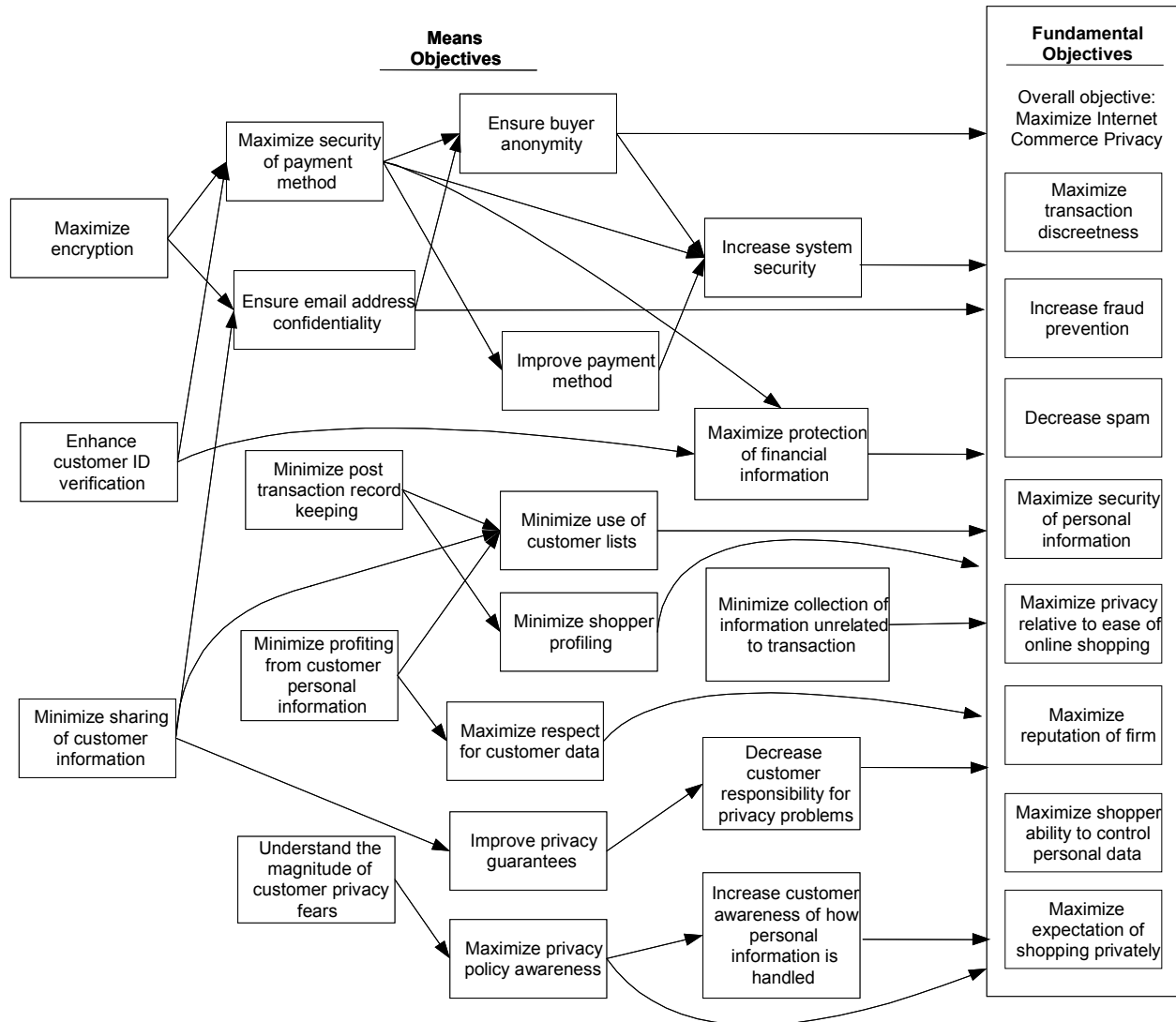


Figure 1. A Means-Ends Objectives Network for Internet Commerce Privacy

4 REFERENCES

Culnan, M. J., and Armstrong, P. K. "Information Privacy Concerns, Procedural Fairness, and Impersonal Trust: An Empirical Investigation," *Organization Science* (10:1), 1999, pp. 104-115.

Dhillon, G., and Backhouse, J. "Information System Security Management in the New Millennium," *Communications of the ACM* (43:7), 2000, pp. 125-128.

Keeney, R. L. "Creativity in Decision Making with Value-Focused Thinking," *Sloan Management Review*, Summer, 1994, pp. 33-41.

Keeney, R. L. *Value-Focused Thinking*. Cambridge, MA: Harvard University Press, 1992.

Keeney, R. L. "The Value of Internet Commerce to the Customer," *Management Science* (45:4), 1999, pp. 533-542.

Milne, G. R., and Gordon, M. E. "Direct Mail Privacy-Efficiency Trade-Offs with an Implied Social Contract Framework," *Journal of Public Policy & Marketing* (12:2), 1993, pp. 206-215.

Smith, H. J., Milberg, S. J., and Burke, S. J. "Information Privacy: Measuring Individuals' Concerns About Organizational Practices," *MIS Quarterly*, June, 1996, pp. 167-196.

Torkzadeh, G., and Dhillon, G. "Measuring Factors That Influence the Success of Internet Commerce," *Information Systems Research* (13:1), 2002.