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TRUST FORMATION AND RELATIONSHIP BUILDING IN ELECTRONIC SERVICESCAPES

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ABSTRACT

Trust is the key enabling factor for any relationship – commercial or not. Although it has been extensively studied in various disciplines, information systems researchers have focused on trust in the context of short-term transactional exchanges failing thus to address its evolutionary nature and associated complexities. Addressing this limitation we present a model and define a set of testable hypotheses. A measurement instrument is also developed for the empirical testing of the model and the subsequent theory development. This is deemed essential in order to inform the design of electronic servicescapes that can truly enable and support lasting relationships in virtual commercial settings.

1. INTRODUCTION

The role and importance of trust to interpersonal and commercial relationships is evidenced by the plethora of research efforts within various disciplines such as psychology (Rotter, 1967, 1971), social psychology (Deutsch, 1960), sociology (Lewis and Weigert, 1985), economics (Dasgupta, 1988; Williamson, 1991) and marketing (Anderson and Weitz, 1989; Dwyer *et al.*, 1987; Ganesan, 1994). Trust has been widely recognized as vital for e-commerce, not only as a facilitator for customer acquisition but also as a key enabling factor for customer relationship building and loyalty. However, despite a general congruence regarding its value for e-commerce success, most of the current literature related to this topic focuses on trust in the context of short-term transactional exchanges and fail to examine the formation of trust as a process and as a means for building long-term customer relationships. The majority of studies mainly focus on understanding the need for trust, its antecedents and consequences and the barriers contributing to the lack of trust (Papadopoulou *et al.*, 2001).

Taking into account the limitations of the existing body of work we have developed a model for trust formation and relationship building in business-to-consumer e-commerce. The model follows the evolutionary nature of trust formation in a virtual setting, taking into consideration the consumer's pre-interaction beliefs and attitudes during the initial stages, up to when trust is finally established between

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the two parties. In addition, by proposing a conceptual distinction of trust facets, the model allows for operationalizing trust as a multidimensional construct with a multidimensional set of antecedents (Butler, 1991), which is reflected in the measures developed. Past research has either focused solely on the initial stages before a customer engages in transactions with an Internet vendor (Jarvenpaa *et al.*, 2000; Gefen, 2000) or attempted to operationalize trust unidimensionally failing thus to mirror completely the complexities inherent in the formation of trust in virtual settings.

In the information systems field models are needed in order to leverage acquired knowledge in such a way so that it can be transferred easily to practice. Our model seeks to achieve this and can be used to inform the design of electronic environments that can support the creation of lasting commercial relationships. A note on the measurement instrument development based on the model precedes the final section of this research in progress paper where we specify next steps and describe how a virtual servicescape will provide the setting for the instrument's application.

2. RESEARCH MODEL

Drawing from established theoretical work on trust and relationship marketing, our aim was to synthesize a series of trust constructs, determinant variables and trust building processes and conceptualize them in the context of an electronic servicescape, where trust is formed through iterative interactions with promises being made, enabled and fulfilled. This attempt to understand the concept of trust has been aided by an excellent typology of interrelated types of trust constructs (Table 1) proposed by McKnight and Chervany (1996). Based on relationship marketing literature to understand the nature of trust and its development in commercial relationships, we focused on five trust-building processes (Table 1) as described by Doney and Cannon (1997). Examining and building upon Doney and Cannon's work, we have added another trust building process, the credibility process, associated with the assessment of business integrity, thus differentiating it from the capability process as originally proposed by the authors.

Trust Constructs [McKnight & Chervany, 1996]	Trust-building Processes [Doney & Cannon, 1997]
■ Dispositional trust ■ Institution-based trust ■ Trusting beliefs: - Benevolence, - Competence, - Honesty / Integrity, - Predictability, *Confidence in beliefs* ■ Trusting Intention ■ Trusting Behavior	■ Intentionality ■ Capability ■ Prediction ■ Transference ■ Calculative ■ *Credibility*

Table 1: Trust constructs and building processes

The above, representing trust dimensions and development modes, have been synthesized and theoretically interrelated, resulting in an integrated model and a vertical understanding of how trust is formed in a relational exchange between two parties (Figure 1). The model has been based on the assumption that customer trust in an e-commerce business is built through repeated interactions with promises made, enabled and kept within an electronic servicescape. A servicescape, according to

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Wanninger *et al*. (1997), is one of the three primary components that comprise an 'e-commerce information system'. The other two are the supporting infrastructure plus the customer database and analytical tools to support relationship marketing activities.
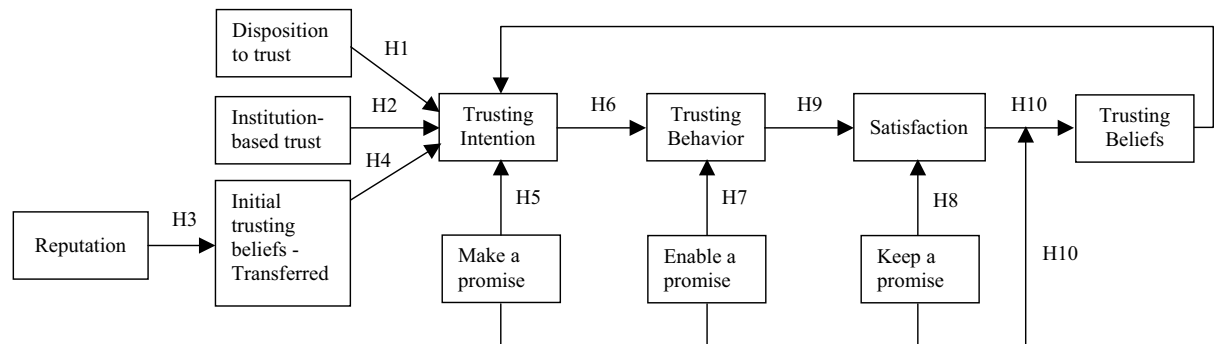

Figure 1: Trust formation through promise fulfillment within the e-servicescape

Trust is characterized by a lack of consensus regarding its definition. Divided in two dominant conceptualizations, trust is viewed by many as a belief or expectation implying a notion of confidence and trustworthiness stemming from the partner's expertise, reliability, or intentions (Blau, 1964; Pruitt, 1981). From another perspective, trust is seen as a behavioral intention or willingness to be vulnerable and rely on another party, accepting the risk and uncertainty emanating from the assumption that the party will behave within accepted norms (Williamson, 1975; Coleman, 1990; Deutsch, 1960). Researchers adopting this view have separated beliefs from trust conceptualizations and defined them as antecedents of trust (Mayer *et al*., 1995). While discriminating between beliefs and behavioral intention, a third research stream has argued that both are necessary components of trust (Moorman *et al*., 1992; McAllister, 1995; McKnight *et al*., 1998).

Trusting beliefs are defined as the extent to which one believes (and feels confident in believing) that the other person involved in a relational exchange is trustworthy. Four main categories of trusting beliefs are identified (McKnight et al., 1996):

Benevolence
The belief that the other person cares about the welfare of one and is therefore motivated to act in one's interest. It includes the motivation of an Internet vendor to provide security of transactions and protect privacy of consumer information.

Competence
The belief that the other person has the ability to do for one what one needs done. It includes the ability of an Internet vendor to guarantee the security of conducting online transactions and the privacy of consumer data. This involves the use of appropriate and effective technological infrastructure, protocols, standards, techniques and mechanisms for secure transactions and protection of privacy as well as the adoption of security and privacy policies.

Honesty/Integrity
The belief that the other person makes good faith agreements, tells the truth and fulfills any promises made. Integrity includes the actual application and enforcement of the adopted security and privacy policies

Predictability
The belief that the other person's actions are consistent enough that one can forecast what one will do in a given situation.

Table 2: Trusting beliefs

Following the theory of reasoned action (Fishbein and Ajhen, 1975), our model for trust formation in B2C e-commerce relationships encompasses both trusting beliefs and trusting intention, as distinct yet related facets of trust (Table 2). The core idea underlying the model is that trusting beliefs lead to a

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trusting intention which is manifested in a trusting behavior. Our contribution to the existing trust models (McKnight *et al*., 1998; Mayer *et al*., 1995) is that trust is viewed in an e-commerce context where its development is affected by the fulfillment of promises. The model suggests that prior to interaction, trusting beliefs are formed from reputation, which in conjunction with disposition to trust and institution-based trust affect trusting intention. Trusting intention is also influenced by the promise that is made by the Internet vendor. Trusting intention in turn and the enabling of the promise made influence trusting behavior. The latter together with the keeping of the promise will determine customer's satisfaction from the overall interaction with the Internet vendor. Finally, satisfaction from the encounter will prompt a reevaluation of the pre-interactional trusting beliefs which will replace the initial 3 trust bases.

3. RESEARCH HYPOTHESES

Customers attempt to characterize an Internet vendor and form prior-to-experience expectations for a service encounter. Initially, a customer is enticed to engage in a relationship with the business through the servicescape based on a positive predisposition towards the business, which is the result of the combination of 3 constructs: disposition to trust, institution-based trust (McKnight and Chervany, 1996) and initial trusting beliefs.

Disposition to trust is a two-fold attitudinal characteristic of the customer. It implies a customer's general *propensity to trust* others stemming from personality and cultural factors (Rotter, 1967, 1971; Wrightsman, 1964). It is not oriented towards a specific trustee but a general, consistent tendency or willingness to trust others (McKnight *et al.*, 1996; Mayer *et al.*, 1995). It affects trusting intention in the initial stages of a relationship. Propensity to trust has been viewed as a trait that leads to a generalized expectation about the trustworthiness of others, a stable within-part factor that influences how much trust one has for a trustee prior to data on that particular party being available (Mayer *et al*., 1995). It has been proposed to contribute information to the explanation of variance in trust if used as a part of a more complete set of variables (Mayer *et al*., 1995; Jarvenpaa, 1998; Gefen, 2000). In the context of e-commerce we posit that disposition to trust encompasses the customer's *attitude towards e-commerce*, in the sense of a positive or negative stance towards this type of commercial exchange, conveying a consumer's Internet shopping orientation. Hence we hypothesize:

H1: A consumer's trusting intention towards an Internet vendor is positively related to the consumer's disposition to trust.
H1a: A consumer's trusting intention towards an Internet vendor is positively related to the consumer's propensity to trust.
H1b: A consumer's trusting intention towards an Internet vendor is positively related to the consumer's attitude towards e-commerce.
Institution-based trust refers to the perceived propriety of the conditions, which involves legal aspects associated with e-commerce and perceptions regarding the security and privacy offered by Internet vendors in general. It refers to the legal framework and regulations as well as to the effectiveness of available technological standards providing guarantees about the security of conducting online commercial transactions and the protection of the privacy of consumer data. Concerns about security and privacy due to the lack of institutional safeguards against legal or technical risks have been reported as major barriers preventing customers from engaging in online transactions (Schoder and Yin, 2000; Hoffman *et al*., 1999). In this vein, institution-based trust can support a customer's trusting intention towards an Internet vendor. Thus we hypothesize:

H2: A consumer's trusting intention towards an Internet vendor is positively related to the consumer's institution-based trust
H2a: A consumer's trusting intention towards an Internet vendor is positively related to the perceived security of online transactions

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H2b: A consumer's trusting intention towards an Internet vendor is positively related to the perceived privacy of consumer data in online transactions.

Reputation has been positively associated with trust in the physical world (Anderson and Weitz, 1989; Ganesan, 1994; Doney and Cannon, 1997) as well as in e-commerce (Jarvenpaa, 2000). Anderson and Weitz, (1992) and Ganesan (1994) have used the term 'reputation for fairness' to imply benevolence, competence and integrity. In e-commerce, we posit that reputation of an Internet vendor involves perceptions of benevolence, competence, integrity, predictability, security and privacy. Through the transference process (Doney and Cannon, 1997), the customer forms initial trusting beliefs with information conveyed from third parties regarding the business reputation and trustworthiness, including information from third party recognition bodies.

H3: A consumer's initial trusting beliefs towards an Internet vendor are positively related to the Internet vendor's reputation
H3a: The Internet vendor's perceived benevolence is positively related to the Internet vendor's reputation.
H3b: The Internet vendor's perceived competence is positively related to the Internet vendor's reputation.
H3c: The Internet vendor's perceived integrity/honesty is positively related to the Internet vendor's reputation.
H3d: The Internet vendor's perceived predictability is positively related to the Internet vendor's reputation.

The initial trusting beliefs a customer has as prior-to-interaction perceptions of an Internet vendor's benevolence, competence, integrity and predictability will lead to an intention to trust this vendor. The importance of prior beliefs about a seller has been emphasized in literature as they have been found to influence perceptions about a seller's actual behavior (Schurr and Ozanne, 1985). Capitalizing on consumers' prior beliefs is one of marketing's main trust-building strategies. We hypothesize:

H4: A consumer's trusting intention towards an Internet vendor is positively related to the consumer's initial trusting beliefs about the Internet vendor.
H4a: A consumer's trusting intention towards an Internet vendor is positively related to the Internet vendor's perceived benevolence
H4b: A consumer's trusting intention towards an Internet vendor is positively related to the Internet vendor's perceived competence
H4c: A consumer's trusting intention towards an Internet vendor is positively related to the Internet vendor's perceived integrity/honesty
H4d: A consumer's trusting intention towards an Internet vendor is positively related to the Internet vendor's perceived predictability.

The combination of these three constructs results in the customer being open to promises made by the business, which aim to augment the customer's trusting intention towards it. Making a promise aims to set customer expectations from the service encounter (Bitner, 1995). As such, it involves using the interactive nature of the electronic environment to make realistic, personalized, customizable and appealing offerings in an attractive, usable and friendly context. The content of the promise has to be clear, explicit and carefully specified and communicated, reflecting the business objective to meet the individual needs of specific customers that the business wishes to address to. In addition to offerings, the act of making a promise reveals any business security and privacy policies as well as other cues (e.g. third party recognition) (Einwiller *et al*., 2000). Such proclamations regarding what the customer should expect demonstrate the Internet vendor's motives and offer a basis for trust (Good, 1988). Provided that the customer is satisfied with the promise made, he expresses a willingness to depend on the business - a trusting intention, and anticipates the promise to be enabled. Thus we hypothesize:

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H5: A consumer's trusting intention towards an Internet vendor is positively related to the consumer's perceived satisfaction from the promise being made by the Internet vendor.

According to the theory of reasoned action (Fishbein and Ajhen, 1975), behavior is determined by intention. In a similar vein, trusting intention will be followed by a behavioral manifestation of this intention, a trusting behavior (McKnight *et al.*, 1996). A customer will act in accordance with his/her intention to trust the Internet vendor and engage in a trusting behavior. This is also consistent with Mayer *et al.*'s (1995) Integrative model of organizational trust, where the outcome of trust is risk taking in a relationship (RTR) or trusting behavior. Hence, we propose the following hypothesis:

H6: A consumer's trusting behavior towards an Internet vendor is positively related to the consumer's trusting intention towards the Internet vendor.

Enabling promises involves servicing the customer in order to meet his expectations raised by the promise made earlier. Facilities allowing customers to search, preview and experience the available products (and services) before purchase as well as the provision of order submission and payment mechanisms can be part of enabling a promise, aiming to impel customers in a trusting behavior. An essential prerequisite for any promise being enabled is providing for the security of transactions and customer privacy, so as to remove any concerns that prevent the customer from passing from the trusting intention stage to that of a trusting behavior towards the business. Enabling the promise within the servicescape allows the trusting intention to be manifested and leads the customer to accept the risk inherent in the situation and actually depend on the promise, thus act in a trusting behavior. Hence our hypothesis is:

H7: A consumer's trusting behavior towards an Internet vendor is positively related to the consumer's perceived satisfaction from the promise being enabled by the Internet vendor.

Keeping the promise is the most critical activity for building trust (Bitner, 1995). Keeping promises implies a correct and on-time delivery of products/services, the effective management of the payment process and the provision of post-sales customer services. This asks for a solid infrastructure for the delivery of digital or physical goods and services. In any case, the servicescape should cater for the fulfillment of the promise exactly as this was originally made to the customer. Keeping the promise has a positive impact on the customer's perceptions and future expectations regarding the quality of the interaction with the business through the servicescape. This point, when all stages of promise fulfillment have been completed represents what Carlzon (1987) calls "moment of truth". Following a trusting behavior, the customer evaluates the service encounter and compares the service he expected according to the promise that was initially made to him with his perception of the service received. The degree to which the perceived service meets customer expectations, the service quality (Gronroos, 1984; Lewis and Booms, 1983; Parasuraman *et al.*, 1985), will determine customer satisfaction from the overall interaction with the Internet vendor.

H8: A consumer's perceived satisfaction from the overall interaction with the Internet vendor is positively related to the consumer's perceived satisfaction from the promise being kept by the Internet vendor.

H9: A consumer's perceived satisfaction from the overall interaction with the Internet vendor is positively related to the consumer's trusting behavior towards the Internet vendor.

Pre-interactional beliefs and attitudes create expectations to the consumer prior to the service encounter (Bitner, 1990). Any interaction with a promise being made, enabled and kept, at any point of its fulfillment is part of the service encounter, presenting an opportunity for the organization to build trust by influencing the customer's trusting beliefs (Bitner, 1995). At each stage of promise fulfillment, there is an evaluation of that service encounter stage, where there is a comparison of prior expectations related to vendor's characteristics, i.e. benevolence, competence, integrity and

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predictability with the actual perceptions of these attributes, as the customer interacts with the Internet vendor. According to the disconfirmation paradigm (Churchill and Surprenant, 1982; Oliver, 1980) this comparison results in satisfaction if there is a confirmation or a positive disconfirmation of expectations. Each stage of promise fulfillment reflects a particular attribute of the vendor which is assessed in comparison to the initial perceptions. During an encounter, the customer evaluates the various stages in which a promise is fulfilled and tests the vendor's benevolence, competence, integrity and predictability to confirm and strengthen the respective trusting beliefs. Thus, each stage of promise fulfillment is an individual transaction - a direct form of interaction with the vendor - where prior-to-encounter expectations are compared with actual perceptions to assess satisfaction from the particular stage of the promise fulfillment and determine consumer's beliefs about the vendor.

At the end of the interaction, the overall satisfaction from the entire encounter stemming from the comparison of expectations formed at the "making a promise" stage with the actual perception of the promise delivered will influence trusting beliefs and confidence in them. Promises made, enabled and kept can be viewed by the customer as transaction specific investments (TSIs), which are suggested to increase trusting beliefs about a vendor (Anderson and Weitz, 1992; Ganesan, 1994).

We argue that the evaluation of the encounter resulting in the establishment of trusting beliefs is performed through six trust-building processes. During customer's interaction with each stage of promise fulfillment as well as the overall experience within the virtual servicescape, each one of the trust building processes is activated to strengthen customer's trusting beliefs about the business as well as customer's confidence in these beliefs. When a promise is made, the intentionality process (Doney and Cannon, 1997) is initiated to help the customer determine the business motives and intentions, influencing his trusting belief in the business benevolence. Enabling the promise invokes the capability process (*ibid.*), an assessment of the business ability to realize its promise, which affects the customer's trusting belief in the business competence. Keeping the promise triggers the credibility process by which the customer evaluates the extent to which the business has actually delivered on its promise and develops the trusting belief in the business integrity. The entire interaction with the servicescape results in the activation of the rest of the trust building processes. Relying on the prediction process (*ibid.*) the customer makes inferences about the business consistency in delivering the promises it makes, enhancing his trusting beliefs in the business predictability. Finally, with the calculative process (*ibid.*) the customer assesses the costs and benefits of the business possibly acting in an untrustworthy behavior to increase his confidence in the trusting beliefs.

H10: A consumer's trusting beliefs and confidence are positively related to the consumer's perceived satisfaction from the encounter with the Internet vendor.
H10a: A consumer's trusting belief in the Internet vendor's benevolence is positively related to the perceived satisfaction from the promise being made by the Internet vendor, through the intentionality process.
H10b: A consumer's trusting belief in the Internet vendor's competence is positively related to the perceived satisfaction from the promise being enabled by the Internet vendor, through the capability process.
H10c: A consumer's trusting belief in the Internet vendor's integrity is positively related to the perceived satisfaction from the promise being kept by the Internet vendor, through the credibility process.
H10d: A consumer's trusting belief in the Internet vendor's predictability is positively related to the perceived satisfaction from the overall interaction with the Internet vendor, through the prediction process.
H10e: A consumer's confidence in his/her trusting beliefs is positively related to the perceived satisfaction from the overall interaction with the Internet vendor, through the calculative process.

These trusting beliefs will substitute the initial three trust bases and will serve as the launch pad for future interaction with the business affecting trusting intention and subsequently trusting behavior. Each repetition of the customer's contact with this environment acting in a trusting behavior will

further enhance his trusting beliefs resulting in the continuation of the trusting relationship with the business via the repeated use of the servicescape.

To empirically assess the theoretical model and the depicted relationships, a measurement instrument was developed. Following from construct definitions, measures were developed using multiple items scales for each construct, based on Churchill's paradigm (1979). The scales were generated on the basis of previous measures for trust, a review of the relevant literature and interviews. The items used were borrowed from existing validated measures as suggested by Straub (1989), adapted with slight modifications where necessary to reflect the definition and tap the dimensions of the constructs. Items with slightly different meanings were added to provide a better foundation for the initial item pool which was subsequently refined to derive the final instrument. A pretest was conducted with a sample of 10 people, 5 academics and 5 practitioners. The participants were presented with the list of items and a list of constructs and were asked to assign each item to the construct that captured it best and to comment on the item applicability to other constructs. Based on this test the initial discriminant and convergent validity of the items was assessed to produce a refined set of measures. The preliminary instrument will be further modified after the results of a pilot test which is currently in progress, to result in the final set of items which will be used for the empirical study. Exploratory factor analysis will be employed to assure that every item is used to measure one and only one construct assisting in measure purification. Unidimensionality and convergent and discriminant validity of the constructs will be evaluated with confirmatory factor analysis. Then, internal consistency will be examined using Cronbach alpha's. Sample items of the measurement instrument are provided in the Appendix.

3. FURTHER RESEARCH AND CONCLUSIONS

We are currently in the process of collecting data in order to purify the measures. A pilot test of the instrument is being conducted with 50 respondents, comprised of faculty members and students. The resulting measures in the form of a questionnaire will be used for the second part of data collection. A lab experiment will be conducted with a sample of 200 undergraduate and postgraduate students. The experiment is designed to test our model in the context of an electronic servicescape which is currently being developed using virtual reality and agent technology. The e-servicescape has been designed as a three-dimensional virtual world depicting a shopping mall comprised of several virtual stores, populated by anthropomorphized avatars representing customers and salespersons

A customer will be able to visit the virtual servicescape in the form of an avatar and engage in shopping activities by interacting with the salesperson avatars, which will be implemented as agents. Salesperson agents will be divided in two categories, mall agents and business agents, depending on their role in the e-servicescape. Mall agents will welcome and greet the customer visiting the virtual mall and guide him to the stores. They will be able to perform a search and recommend the store(s) with the products or services that are best suited to the customer needs. Business agents will act as surrogates of a company's store salespersons, serving the customer that visits a store by following the suggestion of the mall agent and offering assistance regarding the products or services available. In this view, the design of the e-servicescape as a shopping mall of multiple stores where customers, businesses and salesperson agents are visualized, allows for customer interaction within the e-servicescape at two distinct levels depicting the functions of making and enabling promises. At the first level, promises are made through the mall agents, while at the second level promises are enabled by the business agents in the virtual stores. Mall agents will demonstrate the vendor's benevolent intention and motivation to act in the customer's interest in order to force the creation of a customer's trusting intention towards the business and a trusting belief in the business benevolence through the activation of the intentionality process. Business agents will show the business competence to meet the expectations raised by the promise made earlier by the mall agents in order to encourage the manifestation of the trusting intention to a trusting behavior and build a trusting belief in the business competence through the capability process.

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We expect that the results of this study will provide empirical support for our proposed hypotheses and add to our theoretical and practical understanding of how trust can be built and facilitate long-term commercial relationships that are developed within electronic environments.

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APPENDIX: Sample items of the model variables

All constructs (except Trusting Behavior) are measured on a 5-point Likert scale from Strongly Disagree to Strongly Agree

Reputation
This Internet vendor has a reputation for being honest
This Internet vendor is known to be concerned about customers

Benevolence
My needs and desires are very important to this Internet vendor

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Competence
This Internet vendor is very capable of performing its job

Integrity
This Internet vendor deals honest with me

Predictability
This Internet vendor behaves in a consistent manner.

Confidence
I feel confident that this Internet vendor can be trusted

Propensity to trust
Most people can be counted on to do what they say they will do

Attitude towards e-commerce
The idea of using the Internet to shop is appealing

Perceived Security
I feel safe completing commercial transactions over the Internet

Perceived Privacy
I feel safe providing personal information to a commercial web site

Trusting Intention
I would use my credit card to purchase from this Internet vendor

Trusting Behavior
I did a purchase from this Internet vendor

Making a promise
This Internet vendor makes realistic promises

Enabling a promise
This Internet vendor provides good search facilities

Keeping a promise
This Internet vendor does things exactly as promised to me

Satisfaction from overall interaction
This Internet vendor's behavior meets my expectations