Mangoes and chilli peppers: a domain study of online trust in eAuctions

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Abstract
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A result of this discussion I seek to answer the question: what mechanisms do people perceive as important to increase online trust prior to an online transaction? A better understanding of online trust adds to the body of theory and can be used to improve the design of online auctions.

Keywords
Mangoes, Chilli, Peppers, Domain, Study, Online, Trust, eAuctions

Disciplines
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Mangoes and Chilli Peppers: A Domain Study of Online Trust in eAuctions

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Abstract

Auctions are one of the most successful types of e-commerce. The price of this success is the incidence of online fraud and an increasing number of disputes between buyers and sellers. A better understanding of online trust is required. A qualitative study is discussed within this paper to identify factors that increase online trust at an online auction.

A result of this discussion I seek to answer the question: what mechanisms do people perceive as important to increase online trust prior to an online transaction? A better understanding of online trust adds to the body of theory and can be used to improve the design of online auctions.

Keywords

Trust, power, e-auction, online auction.

INTRODUCTION

Online auctions are a very successful form of e-commerce hosted on Internet sites such as Amazon, eBay, Graysonline, uBid and Yahoo. Online auctions form individual transactions by matching buyers with sellers for the exchange of consideration and goods listed on the site. These buyers and sellers can be virtually anonymous and transactions formed between them could be as sweet as mangoes or provide after-effects like chilli peppers.

About 47% of consumer-fraud complaints were Internet-related, up from 31 percent in 2000 (Today 2003 p.1) and online auctions appear to be the choice of fraudsters (Selis et al. 2001). The major problems at online auctions are transactions that do not meet expectations, non payment for goods, the dispatch and receipt of goods, inconsistencies between the goods received and the expectations, the terms of sale and other potential reasons may exist for dissatisfaction (FTC 2003, Katsch et al. 2000, Selis et al. 2001). Buyers and sellers are just as vulnerable online as they are offline or even more so.

Trust is required at an online auction when bidding with the purpose of entering into a transaction. Online trust is a broad construct as it spans the end-to-end aspects of e-business .... It extends beyond the web site and includes all electronic networks used by the firm (Shankar et al. 2002 p.326).

This research investigates people’s perceptions of mechanisms required to increase online trust prior to a consumer-to-consumer transaction at an online auction. This paper presents an analysis of qualitative data collected from research study participants as part of a larger research program investigating trust in online auctions (e-auctions).

This paper seeks to answer the question: what mechanisms do people perceive as important to increase online trust prior to an online transaction?

This research is important for practitioners and researchers to gain a better understanding of power and trust. These are two important and little understood constructs in e-commerce which need to be more effectively understood in order to build better e-commerce models and to attract people to transact rather than browse online.

LITERATURE REVIEW

Trust and power are two key constructs in understanding what drives and inhibits people to transact business on the Internet. Each construct is discussed in turn as a basis for the research approach underpinning this study.
Trust

Trust is the consumer’s willingness to rely on the seller and take action in circumstances where such action makes the consumer vulnerable to the seller (Jarvenpaa et al. 1999). A buyer at an online auction is faced with the choice to cede authority and subsume to the power (Van den Bos et al. 2002) of a seller and bid with the purpose of entering into a transaction. At an online auction the seller is virtually anonymous and trust is required due to the possibility of exploitation and exclusion. (Lind 1995, Van den Bos et al. 2002). The objects of trust that are of interest to this research are the things that can be trusted (Noooteboom 2002 p.10) and those things that people perceive will increase online trust.

Mc McKnight et al. (1998) identified personality, institution, cognitive, calculative and knowledge as the five major bases of trust.

Personality trust is based on a general tendency to trust others (Rotter, 1967) (McKnight et al. 1998 p.475). People will have a tendency to trust online auction sites and online auction transactions based on a general tendency to trust others that was developed in early childhood.

Institutional trust reflects the security one feels about a situation because of guarantees, safety nets, or other structures (Shapiro, 1987; Zucker, 1986) (McKnight et al. 1998 p.475). Major dimensions of institutional trust are structural assurances and situational normality (Bhattacherjee 2002, Koufaris & Hampton-Sosa 2002, McKnight et al. 1998, Pavlou & Gefen 2002, Pavlou et al. 2003). These dimensions as presented in Table 1.

<table>
<thead>
<tr>
<th>Guarantees</th>
<th>Safety Nets</th>
<th>Recourse</th>
<th>Regulations</th>
<th>Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit card guarantees</td>
<td>Auction house escrow</td>
<td>Legal system, contracts and site expulsion</td>
<td>Standards of behaviour</td>
<td>Buyer driven certification</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Structural Assurances</th>
<th>Situation Normality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web site appearance, presentation and specification of the item being auctioned (images, description and specifications)</td>
<td>Privacy, security, conditions of use, user agreements, identifiers and socially constructed roles</td>
</tr>
</tbody>
</table>

Table 1: Institution Based Trust

Cognitive trust is based on rapid, cognitive cues or first impressions (McKnight et al. 1998 p.475). The two types of cognition based trust are categorisation processes and illusions of control, refer to Table 2. Categorisation processes can provide high levels of trust in an online auction where the other person shares common values, shares common goals, has a good reputation and possesses certain stereotypes that are appealing (McKnight et al. 1998). Furthermore illusions of control may also provide high levels of trust at an online auction such as some small action to confirm ones initial trusting belief (McKnight et al. 1998).

Knowledge trust is based on an interaction history and the first hand knowledge that parties have of each other (Mc McKnight et al. 1998). The buyer and seller will be able to base their trust on this knowledge. At an online auction the buyer and seller are virtually anonymous and are not expected to have firsthand knowledge of each other. However, they may have firsthand knowledge of the online auction site.

<table>
<thead>
<tr>
<th>Categorisation</th>
<th>Illusions of Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similar interests (e.g. product, types, auctions, email hosts, type of replies)</td>
<td>Questions to the seller (e.g. responsiveness to questions, quality of reply), and ability to take transaction off the auction site.</td>
</tr>
</tbody>
</table>

Table 2: Cognitive Based Trust

Calculative trust is a trusting stance (Mc McKnight et al. 1998 p.475). A buyer or a seller may consider or calculate the potential benefits and losses of the other party’s cooperation or non-cooperation. Benefits can encourage good behaviour and penalties can discourage bad behaviour. At an online auction a benefit is good transaction feedback and a penalty is a fine or a suspended trading account.
Power

Power is a broad construct that includes various types of power such as coercion, reward, legitimate (position), expert, referent, and informational power (French & Raven 1959). The balance of power changes as goods and consideration are transferred between the parties. Power will be more balanced if the resources are shared between the parties and power will be less balanced if one party has more of the resources. The resources can include the goods, the consideration, or special skills and knowledge. Power at an online auction is the ability to influence the decisions or actions of others (Thorelli 1986 p.38). The buyer and the seller may try to communicate to influence each other or they may not. At an online auction the buyer and seller may trust a powerful third party such as the auction site or an independent third party.

A relationship between power and trust has been supported by previous researchers (Duarte & Davis 2000, Geyskens et al. 1998, Thorelli 1986).

RESEARCH METHODOLOGY

To investigate what mechanisms people perceive as important to increase online trust in an e-auction situation, qualitative feedback was requested as part of a larger experimental study. This paper discusses this qualitative feedback in order to shed some contextual ‘light’ on the motivation of the research subjects. The qualitative feedback includes items that may increase the participant’s level of trust in dealing with sellers at an online auction.

The Experimental Scenario

Undergraduate and postgraduate participants from a leading university in Sydney were provided a research instrument, a scenario and randomly allocated one of four levels of power. Every participant was assigned the role of the buyer. Participants were asked to assume that they needed to purchase a motor vehicle of the type offered at an online consumer-to-consumer auction. A motor vehicle is expected to have a high potential for information uncertainty compared with that of a commodity item (Akerlof 1970, Ba & Pavlou 2002, Mishra et al. 1998). Information related to a motor vehicle includes; condition, colour, accessories, type, make, model, year and the expertise of the seller.

Four manipulations of power were used to affect trust levels within the experiment. The manipulations of power were contained within dispute resolution procedures, as presented in Table 3. This table acknowledges that power may reside in different places, the relationships between the parties may change and the bases of power may be different. A higher ‘power to resolve’ is expected to resolve more disputes, and a lower ‘power to resolve’ is expected to resolve less disputes. Some manipulations include the availability of a third-party role, as a third-party is expected to increase ‘situation normality’ by providing a proper order to an online auction and mastery over ambiguous circumstances. Mediation is also expected to increase structural assurances by providing parties access to a form of recourse. ‘Situation normality’ and structural assurances are expected to reduce complexity and increase trust.

The buyer understood that the current bid was fair and that as the auction was due to close, they must decide whether to place a bid for the motor vehicle and to identify any items that they felt would help increase or decrease trust in dealing with sellers at the online auction.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Dispute Resolution Functionality</th>
<th>‘Power to Resolve’</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>Process is implied (Participants perceptions)</td>
<td>Low</td>
</tr>
<tr>
<td>M2</td>
<td>Buyer and seller in a dyadic relationship</td>
<td>Medium</td>
</tr>
<tr>
<td>M3</td>
<td>Mediator available for a triadic relationship (Mediator can recommend a resolution)</td>
<td>High</td>
</tr>
<tr>
<td>M4</td>
<td>Mediator available for a triadic relationship (Mediator can make and enforce their final decision to solve conflict)</td>
<td>High</td>
</tr>
</tbody>
</table>

Table 3: Experimental Manipulations of Power with Dispute Resolution Mechanisms

Mechanisms identified by participants to increase or decrease online trust were abstracted or grouped into key themes. These themes emerged from the data or were derived from the literature as in a normative approach. To allow themes to emerge from the data, the qualitative data was codified using Concept Map Tools version 2.9.1 (UWF 2003). The responses were codified as concepts, the concepts were arranged to highlight commonality and abstracted to form themes. The concepts and abstractions were linked and verbs used to help explain these linkages. The abstractions were then arranged around the main concept of online trust. This technique allowed the concepts and themes to emerge from the data in a “bottom up” approach. The normative view of online trust
was considered by placing participant’s qualitative responses into groupings derived from the normative theory, refer to Tables 1 and 2. These groups are the major elements of online trust.

The qualitative responses were also analysed using participant demographics to determine if differences existed between the types of participants.

**QUALITATIVE DATA ANALYSIS AND RESULTS**

No discernable differences were found in the demographics between the thirty-seven students that responded to the qualitative section of the research and the one hundred and one students that participated in the overall research design. The qualitative results presented here appear to be representative of all of the study’s participants. Results will now be discussed based on the thirty-seven qualitative responses received.

21.1% of undergraduate students had previously used e-auctions compared with 33.3% of postgraduate students. 27.0% of all participants had participated in one or more online auction transactions. Participants had purchased or sold items in 92 online auction transactions and 5 of these transactions had resulted in a dispute. In other words a dispute had been experienced once in every 18.4 e-auction transactions. Participant demographics for this study are presented in Table 4.

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>Undergraduate Participants (n=19)</th>
<th>Postgraduate Participants (n=18)</th>
<th>Total Participants (n=37)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td><strong>Course</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>19</td>
<td>100.0</td>
<td>18</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>18</td>
<td>94.7</td>
<td>0</td>
</tr>
<tr>
<td>Missing data</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>63.2</td>
<td>12</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>31.6</td>
<td>5</td>
</tr>
<tr>
<td>Missing data</td>
<td>1</td>
<td>5.3</td>
<td>1</td>
</tr>
<tr>
<td><strong>E-Auction Activity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participants that purchased</td>
<td>4</td>
<td>21.1</td>
<td>6</td>
</tr>
<tr>
<td>Participants that sold</td>
<td>2</td>
<td>10.5</td>
<td>2</td>
</tr>
<tr>
<td>Participants with no experience</td>
<td>15</td>
<td>79.0</td>
<td>12</td>
</tr>
<tr>
<td>Missing data</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4: Study Demographics

On average participants (P) rated their knowledge of online auctions slightly lower than ‘average’ as shown in Figure 1. Participants that had no previous transactions (NPT) at an online auction rated themselves on average as having poor to average knowledge of online auctions whereas those that had previous transactions (PT) rated themselves on average as having average to good knowledge of online auctions and closer to good knowledge. Participants that had purchased and sold (PS) items at an online auction on average rated themselves as having more knowledge (good to very good) than respondents that had only purchased (Pu) at an online auction (average to good). Participants that had completed more than five transactions (>5) on average rated themselves as having more knowledge (good) than people that have less than five transactions (<5) as average to good. The averages support that a person that has completed more online auction activities perceives themselves as having more knowledge of online auctions than a person that has completed less online auction activities. A person that had previously visited, interacted with sellers, bid, purchased, and sold at an online auctions has more experience and greater perceived knowledge than a person that has not participated in all of these activities. In general a participant’s reported knowledge of online auctions appears to increase as the types and number of their activities increase.

Concept Map Tools were used to analyse the qualitative data. Eight major themes emerged from the concept mapping techniques as sellers (35.1%), processes (32.4%), assurances/guarantees (32.4%), references/testimonials (18.9%), website reputation and associations (21.6%), security (10.8%), services (8.1%), and site presentation (5.4%). These themes and associated concepts are presented in a Concept Map, refer to Figure 2, and each of the themes will now be discussed in turn. The theme of sellers includes history details, identification of the seller, contact with the seller, sellers’ ratings and transacting with sellers offline. The processes theme relates to terms and conditions, the seller’s agreement, dispute resolution processes, recourse, binding processes and more detailed processes. Assurances/guarantees theme is the auction site taking responsibility for transactions, assurances similar to credit card guarantees, escrow and insurance. References/testimonials theme is references and testimonials from friends, acquaintances, relatives and other
users. Other users are people that have previously used the auction site. The website reputation/associations theme relates to the size of the site, how long it has been in business and other organisations that are associated with the site. The security theme is encryption of data and secure systems for information transfer. The services theme is required for mediation services, services to verify goods, and trusted delivery services. Finally, the presentation theme relates to the presentation and layout of the website.

Figure 1: Knowledge Rating

Legend: P=Participants, NPT = No Previous Transactions, PT = Previous Transactions, Pu = Purchased, PS = Purchased and Sold, >5 = Greater than 5 Transactions, <5 = Less than 5 Transactions.

The qualitative data and results were analysed based on participant demographics. The participant demographics considered are transaction history (transacted or not transacted), gender (male and female), and the level of course attended (undergraduate and post graduate) and other.

Transaction History

Participants that had not previously transacted online were concerned with site reputation/associations (25.9%), the seller (22.2%), references/testimonials (22.2%), processes (18.5%), and assurances/guarantees (18.5%). Participants that had previously transacted online were mainly concerned with the seller (70.0%), assurances/guarantees (40.0%) and penalties (20.0%). Penalties is a concept and relates to the processes theme.

Common items between the groups were transaction specific items related to the seller, assurances/guarantees and processes themes. Although these items are common between the groups the percentages differ greatly. Seventy percent of participants that had previously transacted at an online auction were concerned with the seller and forty percent concerned with assurances/guarantees, whereas the percentages in the other group were much smaller. The participants that have not previously transacted at an online auction were concerned with more generic themes related to the auction site. These more generic themes are site reputation, site associations and references/testimonials.

Gender

Feedback received was checked for similarities and differences between the genders. Major items to improve trust for both genders were assurances/guarantees and seller themes.

Males most frequently suggested that items associated with the seller (37.5%) were required to increase trust. The seller’s history, identification of the seller, contact with the seller, other buyer’s ratings of the seller, information related to the sellers previous sales and other seller information that may help to increase trust. Assurances/guarantees (29.2%) were the second most frequently suggested theme to increase trust. The assurances/guarantees themes suggested by males included auction site guarantees, safe transaction methods such as visa, escrow and insurance services. Other ways to increase trust were associations/reputation (12.5%), processes (12.5%) and security (12.5%) related items.

Females most frequently suggested that references or testimonials (36.4%) from family, friends and others were necessary to increase trust. The auction site reputation and associations (36.4%) was the next most frequently suggested theme to increase trust. Reputation and associations related to how long the auction site had been trading, becoming a world-wide known site, and becoming bigger like eBay. Seller (27.3%) related items were also identified by females as a way to increase trust. Other buyers providing an indication of the seller’s trustworthiness, seller history and contacting the seller to buy offline after finding the price is good. Processes (18.2%) were mentioned by females as a theme to increase trust.

Sellers, processes and association/reputation are common to both groups but the percentages are quite different. Males were mainly concerned with transaction specific items whereas females were more concerned with the auction site reputation and associations.
Figure 2: Concept Map for Online Trust
Level of Course

Feedback received was checked for similarities and differences between undergraduate and postgraduate participants.

Undergraduates were mainly concerned with processes (31.6%), seller (31.6%), assurances/guarantees (26.3%), association/reputation (10.5%). Postgraduates were mainly concerned with seller (38.9%), assurances/guarantees (28.9%), processes (33.3%), references/testimonials (27.8%), association/reputation (27.8%).

These two groups appear to share many similarities. The exception is the percentage of postgraduates (27.8%) compared with the percentage of undergraduates (10.5%) that identified concepts related to the references/testimonials theme.

Other

Other groupings of participants were considered based on previous disputes and the research manipulations.

Participants that had previously experienced a dispute thought that the seller (100.0%) was the major item to increase trust. The ability to make contact with the seller, the ability to identify the seller and the physical display of the item for auction at the owner’s premises. The auction site should be able to sue the seller if necessary.

Other analysis did consider groups based on the research manipulations or experimental treatments assigned. The results based on these groups were very similar. It appeared that the manipulation presented to participants did not impact the items considered to increase trust.

Normative Approach

The normative approach was considered and the qualitative responses were placed within groupings provided from theory, (refer to Tables 1 and 2). Table 5 presents participant responses based on these theoretical groupings. The highest rating categories are: proper order, other, shared standards, and recourse. The two highest rated response items are feedback related to the seller with six responses and references from friends with five responses. Items that received three responses are: agreements/terms and conditions, trusted 3rd parties, liability for the auction site, identification of the seller, trusted companies/brand names, and safe transactions.

DISCUSSION

The themes that emerged from concept mapping techniques were compared with the themes from the literature. The concept mapping approach allowed the data to be organised in new ways that provided new insights into online trust. Eight themes emerged from the data using concept mapping techniques. The importance of building trust through sellers, assurances/guarantees and processes emerged from the concept mapping technique. The normative approach tended to hide the importance of sellers and processes across groupings.

If themes that emerged from concept mapping were further abstracted a higher level theme of power emerged from the data. Power combines the themes of assurances/guarantees and processes. The findings support that people transacting at e-auctions would like a powerful third party that is not part of the immediate transaction to ensure that sellers are able to be identified, that processes are in place and operational, and that these parties provide assurances and guarantees. These ideas are important because they represent both previous users and non-users of online auctions.

One non-user of online auctions stated “I don’t trust online stuff”. This indicates that one participant was not likely to become a user of online auctions. The other twenty-six (26) non-users could be considered potential users of online auctions. In other words 96.3% of the non-users were potential users of online auctions if sufficient improvements were incorporated to increase online trust.

The matching of buyers and sellers to form transactions is one aspect of an online auction. The results indicate a disconnect between the online trust items currently provided by online auction houses and sellers and what users and potential users would like to be provided at an online auction. Trust at an online auction site would be increased if the online auction site takes more responsibility in ensuring that any transactions formed are completed to the satisfaction of the parties involved, providing suitable dispute resolution procedures, assisting customers with dispute resolution, providing access to third-party mediation, ensuring sellers accept their responsibilities and providing better levels of assurance and guarantees for transactions formed by them. Online auction sites currently provide some level of access to third party mediation service. However, this research indicates that participants perceived that dispute resolution mechanisms should include well integrated operational processes. The major items identified using the normative approach were proper order, shared standards, incentives and recourse.
Gender similarities and differences were found. Males appear to rely on their own assessments of transaction specifics whereas females tend to look to opinions of others. Females rely on references from acquaintances, relatives, friends, and users in their decision to participate in online auctions. This is expected to be an important design consideration for online auctions. This gender difference could be a generic difference between the genders or more context specific. Certain auction categories would have a greater appeal to particular genders and designs that cater for their target audience would be expected to perform better than designs that do not. This consideration could be considered by the online auction site and/or sellers within categories that appeal to particular genders. Further research could investigate if this gender difference is found in all auctions, specific types of auctions or motor vehicle auctions in particular. This gender difference may be characteristic of all motor vehicle sales.

One explanation for the research findings is that existing and potential users of online auctions would like proper systems in place that extend beyond the forming of transaction to the setting, monitoring and maintenance of standards of practice within the online auction community. Online auction of items that have a high information asymmetry would benefit if the online auction site demonstrated to potential users that they are willing to trust their communities. If an online auction site is not willing to trust their customers then why should anyone else? Users appear to want an online auction site to demonstrate their respect for the communities that they support, to stand behind transactions that they form and provide adequate assurances to demonstrate their trust.

Governments also have a role to play with the provision of adequate and up-to-date legislation and controls over online communities.
LIMITATIONS

The data collected for this paper is qualitative information received in conjunction with an experimental research design. All care was taken to make the research design as real as possible. The site and information presented was based on actual online auction sites. Only 5.4% of the participants identified that improving site presentation and layout would lead to an increase in online trust. No participants that had previously used an online auction site identified site presentation or layout as a possible factor to increase online trust.

Participants in this study have an information systems interest and are not expected to represent a wider population of online auction users or potential users. These limitations are not a major threat as this research provides new insights into online trust in the domain of online auctions.

7. CONCLUSIONS

This paper presented a study which incorporated qualitative data collection to identify mechanisms that people perceive as important to increase online trust prior to an online transaction. Both normative and concept mapping approaches were used to analyse the data. The concept mapping approach showed some unexpected results and new ways of considering online trust.

Differences were found between demographic groups. These differences are important for auction site design, the types of users that auctions sites would like to attract and product categories. Existing users of online auctions are focused on the transaction level characteristics whereas potential users are concerned with both the auction site and transaction level characteristics. Males placed a higher focus on seller themes and assurances whereas the most frequently suggested theme for females were references and testimonials.

REFERENCES


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