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Trust, choice and online shopping

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Introduction and Background

Trust will become an increasingly valued ingredient in a society that is becoming more and more networked. However, the lack of trust is a significant problem in Internet commerce (Castelfranchi and Tan, forthcoming; Keen, 1999; Bons, Lee and Wagenaar, 1997; Ganzaroli, Lee and Firozabadi, 1998, Jevons and Gabbott 2000). For instance in 1999, fraud perpetrated on the web has increased 38% amounting to $3.2 million in the U.S. (Landford and Landford, 2000.) Furthermore, surveys of Internet user attitudes have consistently revealed that lack of trust is a key impediment to people making transactions on the Internet. For example, in the U.S., more than 75 percent of respondents to a Business Week/Harris poll cited privacy concerns as the main reason why they did not use the Web more (Department of Commerce, 1998, citing Green, 1998). Beer (1999) reports the results of a study by Jupiter Communications, an Internet market research firm, indicating that 64 percent of web users do not trust web sites. And Hoffman et al. (1999), in an extensive study of web users, found that:

"The reason more people have yet to shop online or even provide information to Web providers in exchange for access to information, is the fundamental lack of faith between most businesses and consumers on the Web today. In essence, consumers simple do not trust most Web providers enough to engage in 'relationship exchanges' involving money and personal information with them." (p. 80)

The results of a recent study by Arthur Andersen/Andersen Legal (2000) of the 100 most popular web sites in Australia suggest that consumer mistrust is not unjustified. Among other things, the study found that while 72 percent of the web sites collected personal information, only 51 percent had a published privacy policy and only 28 percent (or 55 percent of the sites with a privacy policy) informed visitors that information was being collected. Further, 71 percent of the surveyed web sites with a stated privacy policy stated that personal identifying information may be disclosed to third parties but a third of those sites did not offer users a choice with respect to that disclosure. A telephone survey by IntelliQuest, an Internet market research company, found that in the first quarter of 1999, 63% of online users hesitate to buy for fear of unwanted junk-email (citing Dayal,
Landesberg and Zeisser, 1999). In fact, a survey by Georgia Institute of Technology found that only 4% of Internet users routinely register at websites (citing Dayal, Landesberg and Zeisser, 1999). Studies like these have prompted some authors to argue that trust is now the new currency in Internet environment, and companies should institute trust-building activities as the centre of their Internet strategy (Urban, Sultan and Qualls, 2000).

There may be a number of reasons why Internet shopping is perceived to be risky. First, there is a lack of opportunity to examine the goods before buying. Second, consumers may also fear that their product may not be delivered to the address at the right time. Third, the difficulties involved in returning the goods should the purchase turn out to be unsatisfactory. Fourth, security may be breached resulting in financial fraud. Fifth, consumers' privacy may be violated when information may be given away to a third party without their consent. Sixth, trust needs time to develop and both parties must be given a chance to know each other. Seventh, consumers can only get to know the web merchant through the website which is often inadequate for judgement of trustworthiness to be fully developed. Thus any trust on the Internet must address these fears in order to become effective.

But what is trust? And how does a manager apply a concept like this on the Internet? And will other factors like price discounts, product types, and delivery time moderate Internet purchase? In order to do this, we propose a parsimonious model of trust for Internet commerce, which focuses on the perception of an Internet merchant's trustworthiness by a consumer. In doing so, we reconceptualise three dimensions of trustworthiness based largely from Mayer et al. (1995). This is studied using a choice-based experiment.

### The Three Dimensions of Internet Trust

What is trust? The Oxford English Dictionary defines trust as a “firm belief [that a] person or thing may be relied upon.” The term “belief” highlights the fact that trust is essentially a subjective matter; the party being trusted may or may not be worthy of the trust. It should be noted that trust is different from risk. As Mayer et al. (1995) pointed out, trust is the willingness to assume risk. Thus, willingness to transact on the Internet can be said to be “Internet Trust”. If the person actually goes through the transaction, then that person is said to have assumed the risk. Strictly speaking, according to Mayer et al. (1995), this is not trust, but a “trusting behaviour”. Thus trust is a state of mind, a willingness to assume risk, which is different from the actual behaviour of already assuming the risk. Thus trust comes about when there is risk involved.

Besides risk, trust comes about when there is dependency. This means that one party relies on the action of the other in order to achieve one's goal. In the context of the Internet, the customer for instance must rely on the merchant to deliver the good on time after it is being purchased. The customer is said to be vulnerable in some ways. For some researchers, this notion of vulnerability occupies a central concept of trust. For instance, Baier (1986), defines trust as “accepted vulnerability to another's possible but not expected ill will (or lack of good will) towards one.” More expansive views of trust have been put forward in the literature, as Blois (1999) notes. These include Govier (1994), who recognises that the act of trusting makes one vulnerable, but argues that, in addition, trust involves “expectations of benign action”. Similarly, Hosmer (1995) argues that trust goes “beyond a negative promise not to harm the interests of the other party” and includes an
element of goodwill. In other words, when we trust someone, we rely on them not only not to harm our interests but also, "without receiving instructions from us, [to] take our legitimate interests into account if such circumstances arise" (Blois 1999). Mayer, Davis and Schoorman (1995) argues that this will only occur if the trustor and the trustee already have a good personal relationship. They labelled this dimension, "Benevolence". Thus to Mayer, Davis and Schoorman (1995), trust is more than just the avoidance of harm, but the promotion of good will should the situation arise.

But is this dimension of "Benevolence" appropriate for the Internet? We argue not, because in the context of commerce, a more "calculative" (Williamson, 1993; Coleman, 1990; Doney and Cannon 1997) approach to trust is closer to reality, especially at the outset. In this environment, it would take a particularly naive consumer to form any expectations of benign action" over and above what is required of the web retailer in meeting their commercial obligations to the consumer. This is because very often no personal relationship exists between the consumer and the web merchant. The relationship can be characterised as that of being shallow at best (Sheppard and Sherman, 1998). In fact, it is likely that the Internet consumers tend to adopt an attitude of mistrust at the outset, and need to be convinced that the web merchant is "trustworthy" before they will be prepared to transact at the site. Under such circumstances, one can argue in fact the web merchant must reassure the Internet consumer that their personal information including that of their credit card will not be abused. Our view of this dimension of trustworthiness is therefore less generous than that proposed by some scholars in the area of interpersonal trust. In fact, it is more akin to what Kim and Prabhakar (2000) call initial trust or the formation of initial trust (McKnight, Cummings and Chervany, 1998). However, we acknowledge the similarity in the idea that because the consumer is vulnerable – since sensitive information needs to be divulged (eg. credit card number) before transaction can proceed – at the minimum, the consumer's interest must be protected. We simply call this dimension, "Personal Interest Protection".

At a practical level, this means the web site must be properly encrypted and supported by authentication services, and that the web merchant must adopt privacy guidelines. As a result, online payments and the transfers of funds are always secure and executed only with proper authorisation; customer information should not be sold to a third party without prior permission, and that they are not accessible to unauthorised personnel. In this study, the importance of this dimension is investigated using the presence or absence of privacy protection clause.1

The second dimension of trustworthiness in our model concerns the retailer's ability to deliver on its promises. This dimension parallels with a number of theorists in the interpersonal trust literature who argue that attributes like competence, expertise and skill in the trustee is an essential for trust to occur (Deutsch, 1960; Jones, James and Bruni, 1975; Cook and Wall, 1980; Mayer, Davis and Schoorman, 1995). The importance of this dimension is even more self-evident in the case of Internet transaction. Often not being able to see or feel the product, the consumer must be assured that the product ordered is of the expected quality. One way of ensuring this is to use brands since this is often used as a signal for quality (Swait, Erdem, Louviere and Dubelaar, 1993; Tulin and Keane, 1996). Tan (1999) found that if the purchase risk of the product is high (e.g. an inkjet printer), having an established brand is the most effective in reducing the risk on the Internet.

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1 It should be noted that security is held constant in our choice experiment, as our protest indicated that an insecure web site would always be a dominated alternative and thus violate the requirements of choice analysis.
Dayal, Landersberg and Zeisser (1999) call this notion of Internet brand quality, “merchant legitimacy”.

Beside brand quality, this dimension of Internet trust also encompasses the notion of successful product delivery, that is, the consumer must be assured that the right product will be delivered at the right time to the right address. This is an important promise and must be upheld at all times, since any slippage will inevitably lead to disappointment. This is especially so during festive periods where the goods bought as gifts that must be delivered on time to make it meaningful. This lesson was learnt in the early days of e-tailing. In 1999 for instance, Walmart and Toys “R” Us had to announce on the second week of December, that they could no longer guarantee the delivery of their web-site orders by Christmas. Even Amazon.com with its automated warehouses still failed to deliver their goods on time in Christmas 2000 (SMH Dec. 26, p.23). In July, 2000, seven US e-tailers, including Toys “R” Us, agreed to pay a total of US$1.5 million for civil penalties because of delayed deliveries and yet continue to over-promise prompt service despite backlogs (Fortune, Sept 4, 2000, p.374). Thus a robust fulfilment service is therefore an important element in trust-building of online customers. In sum, this dimension not only includes the quality of goods or service promised by the web merchant, but also the final fulfilment. We termed this whole facet, “Benefit Delivery”.

On a practical level, it means that the web retailer’s efforts should be geared towards enhancing the quality of its products or services, including its delivery-fulfilment as well as building its brand equity. This can do this in a number of ways. For example, by offering products with well-known brands or the inducement of reputation transfer (Stewart, 1999) by associating with well-established business (eg. through web links), the use of certification authority (trusted third party) to authenticate its claims and the use of customer feedback comments on the web site to provide unbiased testimony regarding the quality of its product offering (Resnick, Zeckhauser, Friedman, and Kuwabara, 2000). Furthermore, the web retailer can also implement an effective error-free fulfilment process. This may include, automated warehousing and tracking systems, ... The key aspect of fulfilment is the ability of the customer to place the orders easily and having it delivered efficiently with the minimum of hassle.

A third dimension of Internet trustworthiness concerns the integrity of the web merchant. In the interpersonal trust literature, Mayer, Davis and Schoorman (1995) theorise this to mean, “the trustor’s perception that the trustee adheres to a set of principles that the trustor finds acceptable” (p. 7). It also implies that the trustee has a strong sense of justice and fair play and will not necessarily act in a self-interested manner. Taking this idea into the Internet area, we reconceptualise this dimension to mean that the web merchant is committed to the principles of fair business practices. While this may sound amorphous, the ultimate commitment is the web merchant’s willingness to right any problems that would arise from the dissatisfaction with the purchase. In other words, if the web merchant believes in fair play and justice, then at the minimum, the merchant must be willing to right whatever that might go wrong with the purchase. This dimension is another important aspect of trust because it says that the retailer intends to honour its commitments, and that there is reasonable recourse from them should the transaction go “wrong”. It also sends out the signal that the web merchant is committed to serving their

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2 See, however, Grossman (2000), who reports that a proposal by the British government to address the problem of trust by setting up a network of trusted third parties to encourage e-commerce appears to have been ineffective.
customers, and that they are in the business for the long haul, not simply a “fly-by-night” operation. We simply call this notion, “Willingness to Rectify”.

At a practicable level, this form of Internet trustworthiness can take the form of a money-back guarantee, ease of return should the purchase be unsuitable (e.g. to the nearest retail outlet). Other tactics may include the use of traditional but familiar communication systems like faxes and customer telephone hotlines to make it easier for customers to resolve any difficulties that might arise from the transaction.

Contextual Factors – price discount, product type, delivery time and place of product availability

In addition to the three dimensions of Internet trust discussed above, it can also be argued that certain contextual effects can also significantly affect the likelihood of online purchase. These are price discounts, product type and delivery time.

Of the three contextual factors examined here, price is probably the most salient. This is because price comparisons are easier to carry out on the Internet. Indeed, there are even shopping bots (e.g. Jango) that help consumers to search for the right product with the best price. Furthermore, Ernst and Young (1999) found that consumers often use the Internet as a tool for information research, including prices prior to making their purchase. One survey found that 20 percent of the respondents (housewives) expected to see lower price on the Internet (Jarvenpaa and Todd, 1997). The popularity of on-line auction (e.g. eBay) also attests to the importance of price as an key factor in Internet shopping. Finally, price discount is the most common tactic used by e-tailer startups to build traffic for their web site, albeit with little success for some (Fortune, 2000). In our study price a 20% price discount versus no price discount is investigated.

The inherent nature of the product may also influence the perceived risk. For instance in direct mail, another form of non-store buying, it was found that the higher the value of the product, the higher the level of perceived risk. Furthermore, as the value of the product increases, the difference in the perceived level of risk between direct mail and store also becomes larger (van den Poel and Leunis, 1996).

Another disadvantage of Internet shopping is the delay in the product delivery after the purchase has been made (and having to pay for it). If a consumer needs a product immediately, then going to the shop and buying it would be more suitable. This reluctance to wait may also be motivated by the desire not to make a mistake after investing a considerable amount of search and try-on time. For instance, if buying apparel requires an investment of search and try-on effort, then buying from a shop immediately after the perusal is still the most practical. In this study, delivery time was manipulated by whether the product can be delivered quickly (e.g. within 24 hours for jeans, sports shoes and wrist watches; and one week for personal computer) or after some delay (e.g. within one week for jeans, sports shoes and wrist watch; and one month for personal computer). Where the product can be bought is manipulated by whether it is available over the world wide web, or in a retail shop.

In summary, we theorised that the trustworthiness of the web merchant is made up of three dimensions: privacy protection of customers, ability to deliver the promised
product/service, and willingness to rectify unsuitable purchase. It follows that the consumer's trustworthiness of the web retailer will increase when these dimensions are present. This in turn will increase the likelihood of Internet purchase. Furthermore, it is also theorised that this likelihood of Internet purchase is also moderated by price discounts, product type and delivery time, as discussed above.

**Methodology & Stimulus manipulation**

This research uses choice modelling to assess the impact of the three dimensions of trust. Within each of the dimension, two levels were manipulated. For the 'ability to deliver', they were known brand versus unknown brand. For 'willingness to rectify', they were 30-day money-back guarantee versus no money-back guarantee. For 'privacy protection', there was privacy clause versus no privacy clause. To increase realism, the trust factors were couched in a number of scenarios. The contextual variables investigated were four different product categories (sports shoes, jeans, wrist watches and personal computers); delivery time (fast versus slow); discount levels (regular price versus 20% discount); where the product is available (online versus shop).

Combining both the trust factors and the contextual factors results in a full factorial design of 64 combinations. Using a fractional factorial foldover design, a total of 24 combinations for each product were used. Each subject was given two random products resulting in 48 choice sets per experimental booklet. The diagram below is an example of what a respondent saw in the experimental booklet for each choice set.

**Subjects**

A total of 130 subjects were used in this study. They were a mix of postgraduate and undergraduate business students aged between 20 to 50 years old studying in Australia, and Hong Kong.

<table>
<thead>
<tr>
<th>Choice Set 2</th>
<th>Product</th>
<th>Brand</th>
<th>Money Back Guarantee</th>
<th>Delivery Time</th>
<th>Price Level</th>
<th>Where Sold</th>
<th>Privacy Statement</th>
<th>Tick One Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scenario 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scenario 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Neither of the above scenarios interests me**

**Procedure**

Subjects were be told that study was to better understand factors that influence purchase behaviour. At the front of the booklet was a set of instructions that briefly explained what the stimulus set was, and what the task requirements were. Subjects were instructed to look at each choice set, and from each set to select their preferred option (WWW, Shop or Neither). Three pretests (with a total of approximately 20 subjects) were conducted on the instrument.
Results

Our final data set comprised 6749 choices made by approximately 130 people (after listwise deletion) which represents a response rate of about 30%. The analysis was conducted using LIMDEP's NLOGIT command.

We analysed these choice data by examining the impact that the presence or absence of each of the factors of trust had in each of the various contextual situations. As the table below shows, all our hypothesised variables had an effect in the experiment, although the size of the effects depended on the context. Specifically, we see that the alternative specific constants (how likely a respondent is to choose WWW or Store as opposed to None of the above, all else being equal) vary considerably across the product categories. This implies, not unexpectedly, the people are more willing to consider using e-commerce for some products than others. The important information is the difference between Store and WWW, not the absolute value. Thus, we see that, while people are not really disposed to buying computers at all, if they do, they are only slightly more likely to buy through a store than from the web. Interestingly enough, jeans are the most likely to be bought on the web (given they were going to be purchased at all), followed by computers and watches with shoes last. Other information this table gives us is how various actions will affect the likelihood of choice by your customers. The larger the number (in absolute terms now) the more of an impact each variable had on the probability of choosing that option. Therefore we can see that (overall) the biggest motivator to shop online is the presence of a brand, followed by price discounts, then guarantee, a privacy statement, and finally good delivery times. While in the store, it was price discounts, brand, delivery, then a money back guarantee.

These effects change depending on the products being sold. If you are trying to move shoes online, they have to be cheap and a brand before they’ll be considered. Even then, a store which offers the same brand and discount will win the business very easily. Where the online retailer can make up some ground is on the privacy statement. The same analysis can be performed for each of the remaining categories. These coefficients can be used to estimate expected market shares in various conditions allowing a retailer to decide whether the effort of introducing a privacy statement, discounting, buying in brands, offering a money back guarantee and improving delivery times is worthwhile.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Coefficient</th>
<th>Coefficient</th>
<th>Coefficient</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.16</td>
<td>0.18</td>
<td>0.17</td>
<td>0.17</td>
<td>0.15</td>
</tr>
<tr>
<td>N</td>
<td>6749</td>
<td>1526</td>
<td>1922</td>
<td>1465</td>
<td>1836</td>
</tr>
<tr>
<td>Shoe</td>
<td>-1.7318</td>
<td>-1.7980</td>
<td>-1.5900</td>
<td>-2.1642</td>
<td>-1.5739</td>
</tr>
<tr>
<td>Computer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRAND*STORE</td>
<td>0.9291</td>
<td>1.0842</td>
<td>0.8547</td>
<td>0.9794</td>
<td>0.8731</td>
</tr>
<tr>
<td>GUARANTEE*STORE</td>
<td>0.7732</td>
<td>0.6392</td>
<td>0.9501</td>
<td>0.9366</td>
<td>0.6065</td>
</tr>
<tr>
<td>DELIVERY*STORE</td>
<td>0.8158</td>
<td>0.9173</td>
<td>0.7133</td>
<td>0.9888</td>
<td>0.7420</td>
</tr>
<tr>
<td>LOPRICE*STORE</td>
<td>1.0314</td>
<td>1.0185</td>
<td>1.0686</td>
<td>1.001</td>
<td>1.0660</td>
</tr>
<tr>
<td>Jeans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRAND*WWW</td>
<td>1.0592</td>
<td>1.1608</td>
<td>0.9866</td>
<td>1.2221</td>
<td>0.9542</td>
</tr>
<tr>
<td>GUARANTEE*WWW</td>
<td>0.9744</td>
<td>0.9089</td>
<td>0.9627</td>
<td>1.1989</td>
<td>0.8823</td>
</tr>
<tr>
<td>DELIVERY*WWW</td>
<td>0.5461</td>
<td>0.5562</td>
<td>0.5205</td>
<td>0.8245</td>
<td>0.3519</td>
</tr>
<tr>
<td>LOPRICE*WWW</td>
<td>1.0001</td>
<td>1.1701</td>
<td>1.1222</td>
<td>0.7772</td>
<td>0.9574</td>
</tr>
</tbody>
</table>
Conclusion

Our research shows that trust is an important variable to online retailers. It is clear that the trust factors we have identified play a significant role in deciding whether or not to purchase a product online. Specifically, having a privacy statement (privacy protection), using a known brand (ability to deliver desired attributes), and offering a money back guarantee (willingness to rectify) significantly improve an online retailer’s chances of making a sale. The key question an online retailer needs to ask is whether the expense is justifiable given the expected return. An online retailer could use data like these to generate simulated market shares and decide from those whether or not the expense justifies the expected increase in revenues and profits.

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