The social construction of trust in e-business: An empirical investigation

Margaret Swan
Indiana University

Howard Rosenbaum
Indiana University

The social construction of trust in e-business:
An empirical investigation

Margaret B. Swan
Indiana University
mbswan@indiana.edu

Howard Rosenbaum
Indiana University
hrosenba@indiana.edu

ABSTRACT

In this research, we investigate issues of trust affecting consumers' decisions to purchase goods on an e-business website. What interface elements make a difference in a person's decision to trust a firm (or not) when visiting the site for the first time with no prior knowledge of the firm? What elements enhance or inhibit the social construction of trust? To investigate these questions, we use a three stage methodology: a content analysis of a pure-play electronic publishing firm's website, a usability analysis of the site, and interviews with members of the team that created the site. The findings indicate that people did not significantly change their evaluations of the trustworthiness of the site after using it, and the elements considered most important in their decision to trust the firm involved a mix of site features related to the transaction process, contact information, the online community, the products, and privacy information.

Keywords:

Trust, e-business ecommerce, interface design, e-retailer

INTRODUCTION

Trust is important in all business, but is especially so in e-business, whether business-to-consumer or business-to-business. This is the case because e-business typically lacks the physical proximity and face-to-face interaction that typically characterizes off-line business. In a typical interaction with an e-business, the person interacts solely with the firm's website and makes decisions on the basis of the prior knowledge he or she might have about the firm, or other relevant antecedents of trust, and the evidence that can be garnered from the website. In the scenario where the person has no prior knowledge of the site or the firm, the potential effects of these antecedents are minimized, and the website becomes a primary source of cues and clues that the person uses in the decision whether or not to trust the firm. If a strong enough sense of trust develops, it then influences the person's decision to purchase goods or services from the firm. This scenario is interesting because the formation of trust in a firm is more difficult when a person has no pre-existing institutional knowledge of or confidence in the firm (Swaminathan, Lepowski-White, and Rao, 1999; Salam, Rao, and Pegel, 1998),

In this study, we are investigating issues of trust that affect online consumers' decisions to purchase goods on an electronic publishing firm's e-business web site. We seek to determine the features of the site's interface that make a difference in a person's decision to trust the firm (or not) when he or she is visiting the site for the first time and has no prior knowledge of the firm. What elements of the website enhance or inhibit the process of the social construction of trust? To investigate these questions, we use a three-stage methodology. The paper begins with a brief discussion of the importance of trust in e-business, after which the methods used in the study are described. The findings are presented with emphasis on features of the interface that played a role in enabling or inhibiting the social construction of consumers' trust in the firm. Results of the subjects' overall ratings of the website are reported and indicate that people did not significantly change their evaluations of the trustworthiness of the site after using it. The findings also indicate that the set of elements considered most important in their decision to trust the firm involved a mix of features related to the transaction process, contact information, the online community, the products, and privacy information. The paper concludes with a discussion of the implications of the findings, the limitations of this research, and the third phase of the research, the interviews with the design team, to be conducted during the summer, 2004. By utilizing this combination of methods, we hope to understand the social construction of trust in e-business from both sides of the interface.

TRUST AND E-BUSINESS

Trust is a basic component of all social relationships and is a key element in the emergence of social structure and interaction (Van Den Berg and Van Lieshout, 2001; Seligman, 2000; Giddens, 1984). Trust is at the core of successful transactions and exchanges and the importance of trust building and maintenance as a foundation for successful offline businesses is well accepted and non-controversial (Arrow, 1972). Some see trust as a basis for competitive advantage (Barney and Hansen, 1994). Others argue that purchasing decisions depend, at least in part, on the level of trust that the participants in the transaction have in each other (Dibben, 2000; Hosmer, 1995).

With the rise of e-business, considered here to include both business-to-consumer and business-to-business transactions, the question can be raised about the nature of trust in a networked digital environment. It is still critically important (Ba, 2001; Gefen, 2000; Hoffman, Novak and Peralta, 1999) because its presence "helps consumers build appropriate favorable expectations of what to expect from the vendor," while its absence is a key factor in abandoned transactions and decisions not to purchase (Gefen, 2002; 39). Does the fundamental nature and role of trust change in any significant ways in e-business? Gefen (2002; 40) argues that trust "is even more important in the case of ecommerce because of the less verifiable and less controllable business environment of the Web." Often trust is operationalized for the digital environment as having to do with a site's ability to ensure visitors that security concerns have been met. Because the basis of trust in this case is assumed Aschmoneit and Lenz (2001; 689) argue that

> Until now, the problem of trust in the digital economy has been understood primarily as one of how to guarantee the security and privacy of transactions. But trust in the digital economy is not just about bits or bytes. It is about social relationships, and about building networks that deliver what they promise, be it a product, a collaboration, or simply reliable information.

When considering pure-play e-businesses, meaning that the business does not have an offline presence in the marketplace, the process by which trust is socially constructed becomes interesting because it takes place primarily through the person's interactions with the firm's website. This problem becomes even more interesting when the person has no prior knowledge of the firm because of the diminished importance of antecedents of trust and the increased salience of the website. In order to proceed, the person has to make the decision to trust the firm (or not) on the basis of an examination of the site; this depends on the development of "swift trust" (Davenport, and McLaughlin, 2004; Jarvenpaa and Leidner, 1998; Meyerson, Weick and Kramer, 1996). There is research that proposes lists of features of websites that increase the perception of trust in a firm (Cassell and Bickmore, 2000; Friedman, Kahn and Howe, 2000), but the question remains as to which features make a difference in the formation of trust. Belanger, Hiller and Smith (2002; 264) find that when purchasing goods and services through an e-business web site, consumers place a higher value on security features of the site, compared to third party privacy seals, privacy statements, and third party security seals. This finding reinforces the general assumption in the trust literature that there is a hierarchy of needs that must be met in order for people to develop trust in an e-business, with security as the base and first need to be met.

However, according to Belanger et al (2002; 256)

> …two critical issues have hampered empirical investigations of the impact of consumer trust on on-line purchasing activities. The first issue is centered on the lack of agreement about the definition of online consumer trust (Lee and Turban, 2001). Although most of these definitions capture the notion of risk taking, many are merely operationalizations taken from the traditional marketing literature and applied to the online context. More importantly, few of these definitions specify the on-line trust referents (i.e. the merchant or the computer system).

For the purposes of this research, the definition proposed by Mayer, Davis and Schoorman (1999; 712) will be used here; trust is "the willingness of a party to be vulnerable to the actions of another party based on the expectations that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party." There are many different operationalizations of trust (see Rosenbaum, Davenport and Swan (2003) for a typology of trust); in this paper, swift trust, a form of situational trust, is the most salient because it is a process by which an individual relies on cues and clues in the immediate social environment when deciding whether to trust another individual, group, organization, institution, or object (Karake-Shalhoub, 2002). In the research reported here, the immediate social environment is the person's initial exposure to an ebusinesse-business website.

METHODS

In this section, the website that was used in the study is described, followed by a discussion of the two main methods used to collect data: the content analysis and the scenario-based usability analysis.

The web site

Onlinepublisher.com (not the real name of the site or the firm) is an e-business website run by an electronic publishing firm that is a subsidiary of a large multinational publisher. Onlinepublisher.com is a pure-play e-business and does not have an offline presence. The primary target audience for the site is information technology professionals. The firm's mission is to help its audience learn about information technology. As stated on its home page, the firm seeks to provide service to the entire spectrum of computer user and offers different services for different needs, encompassing free offerings such as online articles and books, and certification training manuals and guides. The site has an online community that requires free registration. Once registered, people have access to specialized services that are not available to non-registered users. Customers may choose to pay for items purchased in the online bookstore and can pay a monthly subscription fee to an electronic reference library where they can "borrow" e-books selected from among the firm's many publications.

Content analysis

To arrive at the list of features to use in the usability analysis, a content analysis of the website was carried out by three trained coders (the authors and a colleague) Each coder examined the entire site and coded its main features into categories. The results were compared for overall level of agreement and aggregated to form the initial set of features of the website's interface that could enhance or inhibit the formation of trust in the firm operating the site. The initial set contained fifteen factors among them logo graphics, banner ads, privacy policy, shopping cart, search tool, author pictures, and book covers. This data formed the basis of the instrument that was used in the usability analysis, described below.

Usability analysis

A scenario-based usability analysis was carried out in a laboratory setting after successful pilot testing. The purpose of the analysis was not to uncover usability problems with the site; instead, the goal was to have people explore the site to determine the set of features that played a role in their decision to trust the site and the firm enough to conduct a transaction (or in their decision not to trust the site and to abandon the transaction).

Recruitment & pre-test questionnaire

Information technology professionals were recruited from a local IT developer's group and other relevant groups in the community and asked to participate in the usability analysis. These people were sought because they are the target audience for the website. A pre-test questionnaire for screening purposes was sent via email to those who responded to an initial recruitment email. One of two screening questions asked participants to indicate the websites that they had visited (out of a list of five). Those who had visited Onlinepublisher.com were excluded from the subject pool. Finally, potential subjects were asked to describe their current profession/area of study to ensure that they met the IT professional criterion. Those who passed the pre-test screening were invited via email to further participate in a session in a usability lab that was videotaped. A total of twelve subjects participated in this phase of the study.

Tasks

In the session, subjects carried out a two-part task-based scenario. The first section of tasks consisted of timed exploration of the web site averaging 20 minutes, although some people finished more quickly. This was followed by open-ended "impression" questions and ratings of the Onlinepublisher.com website. Users were asked to rate the web site in terms of twelve positive-negative paired adjective variables on a scale from 1-7 where "1" corresponded to the positive adjective and "7" corresponded to the negative adjective (e.g. Clean 1 2 3 4 5 6 7 Cluttered). In the second part of the scenario, subjects were presented with a motivational task to guide their next steps. They were asked to select a book from the online bookstore and then proceed through the steps necessary to complete a sales transaction on the site for that book. At each transaction step (e.g. Add to Cart, Select a Shipping Method…), subjects were asked to rate the likelihood of their proceeding with the purchase and to describe reasons for their decision. If a subject indicated aloud that he or she would not proceed at any step, then the facilitator intervened and directed the subject to begin the online survey.

Post-test online survey

After working through the task portion, each subject completed a three-part online survey. Part I consisted of questions about the site's general usability and trust factors. Part II asked subjects to rate various trust factors derived from the content analysis on a 7-pt Likert scale where"1" indicated an important feature for instilling trust in the site and "7" was the converse. Subjects were encouraged to add features that figured in their decision making that were not on the list. Part III consisted of general demographic questions.

Debrief / interview

After they had completed the online survey, the facilitator interviewed each subject about his or her experiences with the website. Topics of discussion included clarification about subjects' verbal comments during task completion and further exploration of their beliefs about trust in e-business websites.

Designer Inquiry

Although not complete, this phase will consist of face-to-face interviews with the designers and managers of the Onlinepublisher.com website. Results will be compared to usability analysis results in order to draw conclusions about the relationships between consumers' and designers' conceptions of the features of the interface that make a difference in the social construction of trust. We expect to learn about the process by which designers built trust into their web sites and, through comparison of the two datasets, the extent to which these designers' views overlaps with those of the subjects who explored the site.

FINDINGS

User Demographics

Twelve subjects - nine males and three females - completed the usability analysis sessions. All but one claimed to use the Internet at least 20 hours per week and three-quarters rated themselves as Internet experts. Eight were between the ages of 25-36, three were between 18-25 and one was between 36-50 years of age. All had IT job titles and most were also students or had higher degrees. All had purchased items online with half claiming to purchase goods and services once a month or more and the other half indicated they made online purchases every 2-3 months or less frequently. The most popular items included computer equipment, media and travel followed by financial services, subscriptions, clothing and housewares, in descending order of frequency. Other items listed included recreational equipment, baby supplies, cosmetics and high-end audio/video gear. The dollar amount spent on online purchases in the last year was divided equally among the following three categories: $100-500, $501-2000, and over $2,000.

OnlinePublisher.com web site

Initial impression

Written responses to questions about initial site impressions and the usefulness of sections of the site were transcribed and compiled. Positive comments were garnered for several aspects of the site interface and its functionality. Examples included praise for the extensive expanding left-hand navigational menu and opinions that the site looked professional and organized and offered a lot of information. Less positive comments were elicited for features such as the presence of too many banner and popover ads, difficulty in browsing the online bookstore, the site's "bland" appearance, the presence of "too much" information on pages, and an unclear site mission.

Some sections of the site were considered more or less interesting by different subjects and varied according to personal preferences. The top two items of interest were online books followed by the free articles; areas deemed less interesting were the bookstore, free articles and certification/exam cram, in descending order. However, when asked which types of materials they would be most likely to purchase for a project most indicated books, both print and online; just a few thought articles would be helpful.

Reputation and trust

Respondents were asked to rate their perceptions of Onlinepublisher.com's reputation among IT professionals on a scale from 1(Excellent) to 7(Poor). Seven participants rated the reputation as a 4 or higher, tending to see the reputation as more poor than excellent. Ratings of trustworthiness were more positive as half the users answered "yes" to the question of whether InformIT.com was trustworthy; the other half thought that "maybe" it was trustworthy. No users considered the site untrustworthy. When asked to compare Onlinepublisher.com's trustworthiness to other e-commerce sites, seven users thought it was "average -no difference", four thought it was more trustworthy, and one thought it was less so

Pre- and post-transaction ratings

Users were asked to rate Onlinepublisher.com twice to see whether there was a difference between pre- and post-transaction ratings. As described above, the ratings were gleaned from twelve paired-adjective continuums where responses could range from 1 (positive) to 7 (negative). The ratings were highly positively correlated (r = 88). An additional dependent means t-test was performed on the two sets of ratings. Concurrent with the relationship suggested by the correlation, there was not a significant difference in means between the two sets, $t(11) = 1.078$, $p > .10$, two-tailed. See Table 1 pre- and post-transaction ratings of informit.com (n=12) for a side-by-side comparison of these averages.

Variable	Averaged Ratings	
	Pre-	Post-
Clean/Cluttered	4.83	4.92
Stimulating/Dull	4.08	4.08
Fast/Slow	2.92	3.33
Informative/Uninformative	3.58	3.00
Innovative/Unoriginal	4.33	4.42
Trustworthy/Unreliable	3.50	3.17
Visually Appealing/Unattractive	3.67	4.00
Well-organized/Disorderly	3.75	3.42
Professional/Unprofessional	3.00	2.67
Dependable/Unreliable	3.42	3.50
Legitimate/Questionable	2.50	2.50
Secure/Insecure	3.42	2.67

Table 1 – Pre- and Post-transaction ratings of InformIT.com (n=12)
Ratings range from 1-7; 1 is positive, 7 is negative.

Transaction Completion/Abandonment

In the second part of the task-based scenario, subjects were also asked to select a potential book to purchase and then go through the steps of an actual transaction on Onlinepublisher.com. At each step in the transaction, subjects had the opportunity to rate their likelihood of proceeding to the next step. At the point a subject stated that he or she would not proceed, he or she was asked to stop the task process.

The first point at which subjects were asked to rate their likelihood of proceeding was immediately after selecting a book. Six subjects claimed on a scale from 1 – 7 that they favored not proceeding. These subjects provided a rating of 5, 6, or 7, with "7" corresponding to "definitely not proceed". Common reasons cited included having no incentive to buy, having a desire to buy an item other than the book had they been given as their option, the book's price, the lack of user reviews, the lack of the ability to physically handle the book, and the fact that the subject was currently using a competitor site (e.g. Amazon.com). One user could not complete the transaction portion because the site went down for database maintenance during the usability session. The rest of the users (n=5) stated they would be highly likely to proceed and attributed this opinion overwhelmingly to the presence of supplemental information for the book such as author information, book descriptions and tables of contents.

The second point gauged for transaction abandonment was after the item had been added to the shopping cart. At this step, six users decided they would not proceed, generally in accordance with their "likelihood to proceed" rating for the previous step. Those who did choose to proceed went through all five points: Add to Shopping Cart, Checkout (enter billing info), Shipping Method, Credit Card info, and Order Summary.

Trust Elements

Users were asked to rate the importance of interface items for instilling trust. A rating of "1" was given to an item considered important for instilling trust and a rating of "7" was given to an item which was considered unimportant. Items that ranked below the midpoint, 3.5, are considered important in the social construction of trust in this e-business website and are marked with an asterisk in Table 2 Mean Ratings and Median Scores (n=12) for Interface Item Importance for Instilling Website (1 = important; 7 = not important). The item considered most important in influencing the decision to trust the site was the Shopping Cart, followed by Contact Us, User Ratings, Book Covers, Privacy Policy, About Us and Free Articles. The least important item was Author Pictures. Other less important interface elements included the Search Tool, Discussion Forums, Personalization, and Author Bios, among others. For a ranked list of the averages and median scores for all factors considered see Table 2.

Element Importance (most to least):	Mean Rating	Median Score
*Shopping Cart	2.25	2.00
*Contact Us	2.67	2.00
*User Ratings	2.83	2.50
*Book Covers	3.08	3.00
*Privacy Policy	3.25	2.00
*About Us	3.50	3.00
*Free Articles	3.50	4.00
Search Tool	3.67	3.50
Help Pages	4.08	3.50
Logo Graphics	4.33	4.50
Discussion Forums	4.75	5.50
Site Map	4.75	5.00
Pop-up Ads	5.00	6.00
Author Bios	5.08	6.00
Banner Ads	5.08	6.00
Personalization	5.08	5.00
Newsletter	5.33	6.00
Author Pictures	6.42	7.00

Table 2 – Mean Ratings and Median Scores (n=12) for Interface Item Importance for Instilling Website Trust (1 = important; 7 = not important)

DISCUSSION

Of the seven elements rated as most important for instilling trust, Contact Us, About Us and Privacy Policy perhaps fit best with traditional notions of essential e-business trust factors. Essentially, these ratings suggest that firm's openness, availability, candidness and conformance to expected norms are crucial for engendering consumer trust. Debriefing interviews confirmed that users felt on-line trust may be gained initially via presence of contact information and standard items such as an About Us page and a privacy policy. However, most users did not feel the actual content of these items was very important, only that there absence would be suspicious. Most claimed they do not actually read a privacy policy or an About Us page, but rather simply check to see that the pages exist as part of their initial evaluation of the website. In the same

vein, the presence of a logo was rated less vital, perhaps an indication that in cases where the user is unfamiliar with the site firm branding is less important than content appropriateness and transaction ease.

Although a shopping cart is obviously a crucial component of an e-business site, its high rank was somewhat surprising. It is unclear whether users felt that the shopping cart transaction *process* was the aspect that instilled trust or whether their opinion was reliant upon the salience of the shopping cart within the interface.

Presence of book covers was ranked fourth in the list of elements. Pure-play site users may not have the option of physically handling materials, so visual comparison is necessary to make up for this sensory loss. Book covers provide a means of identifying whether the item is appropriate and give a user the sense that the book is a tangible object. Author pictures, however, were not assigned the same precedence, and in fact were ranked the least important element. This finding may indicate that although product image is important, users of this type of site in particular are perhaps more interested in content than extraneous visuals.

Free articles were rated in the top-half of items considered important for instilling trust. However, subjects' opinions about the trustworthiness of free articles were somewhat mixed. They thought that offering free articles had the potential to positively or negatively impact trust ratings.

Like free articles, the element User Ratings earned mixed impressions. Subjects indicated that user ratings of books or articles are helpful, but that they might worry that ratings are screened by the website. If this is the case, user ratings do not instill trust that assists purchase decision-making, but rather causes mistrust of the web site owner's motivations. Taken together, the split impressions of free articles and user ratings seem to indicate that consumers' perceptions of control are an important factor in instilling trust. Users have less control on sites that covertly manage content and are therefore less likely to consider those sites trustworthy.

Finally, subjects' overall first impression of the site was cited as an important factor in instilling trust. Our analysis covered only specific interface elements such as pop-up ads or author biographies. However, subjects indicated that they use additional interface items to gauge trustworthiness. Some of these elements include page layout/interface design, speed, consistency, color palette, navigational ease, menu choice structure, and quality of content editing. Several of these items are aesthetic in nature and point to a tendency to judge trustworthiness according to personal taste preferences rather than solely functionality.

CONCLUSION: LIMITATIONS AND FUTURE DIRECTIONS

The analysis of the data indicates that there are features of e-business web sites' interfaces that play a role in the social construction of trust as people explore a website for the first time with no prior knowledge of the firm. This lends support to Briggs' et al. (2000; 325) assertion that design issues are important in the formation of trust and may actually "exert a disproportionate influence on people's first impressions of the trustworthiness of a site" and to Ray's et al. (2001) claim that there is a strong relationship between interface quality and the formation of trust In our study, as subjects were deciding whether they could trust the e-business, they wanted to know that the firm can handle secure transactions, is available for customer contact, makes information about itself easily available to customers and has a clear privacy policy. These findings support the first and the last of the three factors claimed by McKnight et al. (2002; 97) to make a difference in the formation of trust in online vendors: "structural assurance (that is, consumer perceptions of the safety of the web environment), perceived web vendor reputation, and perceived web site quality." One interesting finding was that the subjects did not think that author photographs were important in determine trustworthiness of the site, ranking them at the bottom of the scale as the least useful feature, while ranking photographs of the authors' book covers in the top four features that they uses to assess trustworthiness. This evidence supports the claim made by Riegelsberger et al. (2003; 126) that their "results should discourage the notion that photos are a guaranteed way to build trust."

This study has several limitations that limit its generalizability. First, there was a small number of participants. To be included in the sample, subjects had to fit the profile of the target audience of the site, but despite the attempt to be representative, the small number if subjects might have introduced systematic bias that could have been detected with a larger sample. Second, the subjects were not actual users of the site. This was a simulation and they did not actually purchase the book, which may have influenced their judgments. They were also not allowed to use the web or other resources to research the firm, which may be a typical behavior when deciding to engage in transactions with an unknown e-business. Third, we used usability testing protocols rather than contextual observation so we did not observe subjects in naturalistic settings. Their judgments may have been affected by their presence in the lab. Fourth, in Part II of instrument the directions may have been too vague. The instrument should have instructed the subjects to rate each element based on its presence on the site, e.g. banner ads.

The next phase of the study will involve interviews with the designers and managers of the e-business site used in the usability analysis sessions. The purpose of these interviews is to understand the process by which trust was built into the site from the design and management teams' points of view. What features of the site did they think would be instrumental in conveying the cues to consumers that theirs was a trustworthy site and firm? Comparing these data with the results reported here will provide interesting and useful insights into the social construction of trust from both sides of the interface.

ACKNOWLEDGMENTS

REFERENCES

1. Arrow, K. (1972). Gifts and Exchanges. *Philosophy and Public Affairs* (1:4), 343-462.

2. Aschmoneit, P. and Lenz, M. (2001). The role of trust in business-to-business electronic commerce. *Proceedings of the Seventh Americas Conference on Information Systems*, 698-695.

3. Ba, S., (2001). Establishing online trust through a community responsibility system. *Decision Support Systems* 31, 323–336.

4. Barney, J.B., and Hansen, M.H. (1994). Trustworthiness as a source of competitive advantage. *Strategic Management Journal* (15), 175-216.

5. Belanger, F., Hiller, J.S., and Smith, W.J. (2002). Trustworthiness in electronic commerce: the role of privacy, security, and site attributes. *Journal of Strategic Information Systems* 11, 245–270.

6. Briggs, P.A., Burford, B., De Angeli, A., and Lynch, P. (2002). Trust in online advice. *Social Science Computer Review*, 20(3), 321-332.

7. Cassell, J., and Bickmore, T. (2000). External manifestations of trustworthiness in the interface. *Communications of the ACM* 43(12), 50-56.

8. Chiravuri, A. and Nazareth, D. (2001). Consumer trust in electronic commerce: An alternative framework using technology acceptance. *Proceedings of the Seventh Americas Conference on Information Systems*. 781-784.

9. Davenport, E. and McLaughlin, L. (2004). Interpersonal Trust in Online Partnerships: The Challenge of Representation Idea Group. 107-125.

10. Dibben, M.R. (2000). *Exploring Interpersonal Trust in the Entrepreneurial Venture*. London: MacMillan.

11. Friedman, B., Kahn, P.H., and Howe, D.C. (2000). Trust online. *Communications of the ACM* 43(12), 34-40.

12. Gefen, D., (2000). E-commerce: the role of familiarity and trust. *The International Journal of Management Science, Omega* 28, 725-737.

13. Gefen, D. (2002). Reflections on the Dimensions of Trust and Trustworthiness among Online Consumers. ACM SIGMIS 33(3). 38-53.

14. Giddens, A. (1984). *The Constitution of Society*. Berkeley, CA: University of California Press.

15. Hoffman, D., Novak, T.P., Peralta, M. (1999). Building consumer trust online. *Communications of the ACM* 42(4), 80–85.

16. Hosmer, L. (1995). Trust: the connecting link between organizational theory and philosophical ethics. *Academy of Management Review*, 20, 379–403.

17. Jarvenpaa, S.L. and Leidner, D.E. (1998). Communication and Trust in Global Virtual Teams. Journal of Computer mediated Communication. 3(4)
    http://www.ascusc.org/jcmc/vol3/issue4/jarvenpaa.html

18. Karake-Shalhoub, Z. (2002). *Trust and Loyalty in Electronic Commerce: An Agency Theory Perspective*. Westport, CT: Quorum Books.

19. Mayer, R.C., Davis, J. H., and Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20, 709-734

20. McKnight, D.H., Choudhuryb, V., and Kacmarc, C. (2002). The impact of initial consumer trust on intentions to transact with a web site: a trust building model. *Journal of Strategic Information Systems* 11, 297–323

21. Meyerson, D., Weick, K. E., & Kramer, R. M. (1996). Swift trust and temporary groups. In R. M. Kramer and T. R. Tyler (Eds.), *Trust in organizations: Frontiers of theory and research*. Thousand Oaks, CA: Sage Publications. 166-195.

22. Riegelsberger, J., M.A., and McCarthy, J.D. (2003). Shiny happy people building trust?: photos on e-commerce websites and consumer trust. *Proceedings of the Conference on Human Factors in Computing Systems*, 121 – 128

23. Rosenbaum, H., Davenport, E., and Swan, M. (2003). Situational trust in digital markets: A socio-technical exploration. In Galetta, D. and Ross, J. (Eds.). *Proceedings of the 9th America's Conference on Information Systems*, 1761-1765.

24. Roy, M., Dewit, O., and Aubert, B.A. (2001). The impact of interface quality on trust in web retailers. Cirano. - Scientific Series. Cirano, Montreal, Canada.

25. Salam, A.F., Rao, H.R., and Pegel, C.C. (1998). An investigation of consumer-perceived risk on electronic commerce transactions: The role of institutional trust and economic incentive in a social exchange framework. *Proceedings of the 4th America's Conference on Information Systems*.

26. Seligman, A. (2000). *The Problem of Trust*, Princeton, NJ: Princeton University Press.

27. Swaminathan, V., Lepowski-White, E., and Rao, B.P. (1999). Browsers or buyers in cyberspace? An investigation of factors influencing electronic exchanges. *Journal of Computer Mediated Communication*. 5(2)

28. Van Den Berg, R.J., and Van Lieshout, J.M. (2001). Finding symbolons for cyberspace: addressing the issues of trust in electronic commerce. *Production Planning & Control*, 12(5), 514-524.