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Abstract

The process of building consumer trust in e-Commerce is based on the presence of trust features or trust attributes in the websites. Trust attributes are usually presented to the consumer by some clues on the homepage. For example, the clue 'contact us' will be linked to the trust attribute 'company address'. Consumers may examine e-Commerce websites for the existence of trust attributes. However, to date, which trust attributes contribute to the website's trustworthiness and which trust attributes give more value to consumers has not been adequately explored. Therefore, the purpose of the paper is: (1) to look for relevant trust attributes that should be placed in e-Commerce websites and (2) to identify the importance ranking of trust attributes that contribute to the trustworthiness of e-Commerce website. Five e-Commerce trust models were used for deriving the trust attributes. An online survey that received 1230 respondents was carried out to investigate the importance ranking of important trust attributes. This paper contributes to the discussion on how to build trust in e-Commerce for various stakeholders that include consumers, business organizations, system developers, and also to the researchers.

Keywords: e-Commerce, Trust, Website design, Consumer, Online

Introduction

Recent statistical data indicates that the number of consumers that shop via the Internet has increased (Georgiou and Stefaneas, 2002; Dekleva, 2000; Menasce, 2000). However, the speed of the increase is impeded by the lack of trust in today's e-Commerce websites (Riegelsberger et al., 2005; Gefen, 2002; Dekleva, 2000). According to Hoffman et al. (1999) and Riegelsberger et al. (2003), lack of trust between business and consumer is considered the main obstacle in the uptake of e-Commerce.

In an e-Commerce transaction, personal information about the consumer moves from site to site in order to complete the transaction. This can make consumers feel their personal information is insecure when they shop online. According to Blanger et al. (2002), when consumers are concerned about the privacy of their personal information, they are reluctant to provide information such as their credit card numbers to e-Commerce websites. Thus, the most important step in establishing consumer trust is providing assurances that the consumer's personal information will be protected (Cheskin Research, 1999). This can be achieved by incorporating features of trust or trust attributes in e-Commerce websites.

However, there is lack of knowledge which trust attributes should be include in e-Commerce website that can contribute significantly in building consumer trust. Therefore the aim of the study is to identify the importance ranking of trust according to consumer perception. In this paper the authors firstly review and explore the concept of trust in e-Commerce in order to understand and to identify trust attributes. Based on the reviewed literature, we suggest ten trust attributes that can be considered the most important for inclusion into a website. We then conducted an online survey to identify consumer rankings of the ten trust attributes. The study is followed by suggestion for future work.

The Concept of Trust in e-Commerce

The term 'trust' has been studied in many domains including sociology, philosophy, economics, and marketing (McKnight and Chervany, 1996), and recently in e-Commerce. The nature of e-Commerce imposes a physical distance between consumers and the merchant. Hence, trust is important in e-Commerce because of the less verifiable and less controllable business environment (Gefen, 2002). In this form of e-Commerce, consumers make contact with the merchant for the purchase of products and services in virtual spaces. This may creates the perception in consumers' minds that e-Commerce is inherently insecure and cannot be trusted. For example, when online consumers provide credit card or personal information they are exposing themselves to the possibility of exploitation and distribution of the data. Even when online consumers only browse a website, data may be automatically collected by unseen third parties and later misused or distributed without their consent.

Trust in e-Commerce has primarily an impersonal nature compared to the traditional view of interpersonal trust (Gefen, 2002). In impersonal trust, the competence and calculative processes arise that build trust through signals and incentives (Pavlou, 2001). Furthermore, for consumers to build trust in a particular transaction with a merchant, they employ a competence process to assure that the businesses and the medium are capable of fulfilling the particular transaction in a manner consistent with their confident expectations (Pavlou and Chellapa, 2001). According to Gefen (2002), the three dimensions of trustworthiness that can be applied to e-Commerce were identified by Mayer et al. (1995): they are ability, integrity, and benevolence. Ability is belief in the skills and competence of the trusted party. Integrity is the belief that the trusted party adheres to accepted rules of conduct, such as honesty and keeping promises. Benevolence is the belief that the trusted party, aside from wanting to make a legitimate profit, wants to do good to the customer (Mayer and Davis, 1999).

According to Basso et al. (2001), if the user has previously interacted with the business through a website or other means, these assurances will be based upon direct experience. In the absence of direct experience, users are influenced by the reputation and size of the business, recommendations of friends, published testimonials of other users, and advertising. In other words, while accessing e-Commerce websites, consumers are looking for 'good signs' and 'bad signs' as a method to develop trust (Doherty, et al., 2002). These 'good signs' and 'bad signs' refer to the features of trust or trust attributes that exist in the e-Commerce website. According to some studies, trust attributes can be presented as trusted third party, privacy policy, company address, contact person, and ease of navigation (Kim et al., 2001; Ishaya and Macaulay, 2000; Egger, 2000; Jarvenpaa and Tractinsky, 1999).

Many previous studies have attempted to find a more appropriate way of building trust within e-Commerce websites (Kim et al., 2001; Ishaya and Macaulay, 2000; Egger, 2000; Jarvenpaa and Tractinsky, 1999; Cheskin Research, 1999). They identify ability, integrity, and benevolence as key success factors for creating trust toward other parties in e-Commerce

relationships. Their aim is to draw up guidelines for developing e-Commerce websites that incorporate trust attributes. However, very limited attention is given to investigate which trust attributes give more value to consumer in order to be included into e-Commerce website.

Method

This study consists of two main activities i.e. conducting a literature review and an online survey. The purpose of reviewing existing literature on trust in e-Commerce is to identify the most relevant trust attributes. This was done by examining five models of trust in e-Commerce (Kim et al., 2001; Ishaya and Macaulay, 2000; Egger, 2000; Jarvenpaa and Tractinsky, 1999; Cheskin Research, 1999). The survey using an online questionnaire was carried out to collect information from the user. This survey requires the respondents to visit an e-Commerce website and an afterwards to answer a set of questions. The survey was conducted via the ScreenResearch website. Its URL is www.screenresearch.co.uk, based in the School of Informatics, University of Manchester.

Key to Trust Attributes

The authors explored five models of trust in e-Commerce in order to identify a list of trust attributes. These models have been selected in this study because they specifically focus on the how website design can build consumer trust in e-Commerce. From the study, it is clear that those five models of trust in e-Commerce emphasised the need to provide a website that can communicate trust to consumers. Some of those models clearly provide a list for trust attributes (Kim et al., 2001; Egger, 2000; Cheskin Research, 1999) and some of them only provide hints that can used to identify trust attributes (Ishaya and Macaulay, 2000; Jarvenpaa and Tractinsky, 1999). A list of trust attributes that is derived from those models is summarised in **Table 1**.

Trust attributes can exist in different formats and have different purposes (Riegelberger et al., 2003; Che-Hussin and Macaulay, 2003). These can be clearly seen in a list of trust attributes that presented in Table 1. There are two features of trust attributes that will influence consumer trust i.e. can be seen in the website and can be understood by the consumer (Che Hussin and Macaulay, 2005). Based on these two features, therefore, trust attributes that are listed in Table 1 have been separated into three categories i.e. information-based (IB), function-based (FB), and not-classified (NC). IB refers to the text or image that appears in websites, such as company address, privacy policy and trust marks. FB refers to the process that appears in websites for performing instructions or tasks such as navigation and data encryption. NC refers to the trust attributes that are not included in the study because they appear as features of trust attributes such as accuracy, completeness, and competency. Therefore, only trust attributes from IB and FB will be considered for the investigating their importance ranking. Based on these three categories, Table 2 shows the reorganization and aggregation of trust attributes presented in Table 1.

In Table 2, it is clear that trust attributes that are grouped as IB can be viewed and understood by the consumers when they explore the websites. Trust attributes in this category are more about online merchants and can also be easily designed by the systems developer. Trust attributes that are grouped as FB are more for website development that focuses on website content. Moreover, trust attributes from both categories can be viewed from four different dimensions (Che Hussin and Macaulay, 2003). They are merchant, content, product, and process. Each dimension will be reflected by consumer trust when they look at the trust attributes. For example, trust attributes company address and telephone number that exist in a

website can makes consumers believe that the online merchant exists in the real world and hence consumer trust at this stage is in the online merchant rather than in the website, product, or process. Other examples, such as product brand and price, can attract consumers to trust in the product. These four dimensions are interrelated and can be used to group trust attributes. The dimensions that consist of trust attributes are called merchant-trust, content-trust, product-trust and process-trust. Table 3 shows the trust attributes according to their dimensions.

Table 1: Summary of the Five Models of Trust in e-Commerce

Models of Trust	Trust Attributes
Trust Model for Online Exchange (Kim et al., 2001).	Accuracy, availability, being up-to-date, completeness, being unbiased, credibility, entertainment, usefulness, durability, reliability, brand equity, transience, quality, variety, customisation, competitiveness and availability, transparency, pricing and payment options, financial planning (complexity), sales-related service (refund policy, after-sales, etc.), promotions, delivery fulfillment, quality of media transmission, interface design and contents, security, reversibility, digital certificate, public-key cryptography, authenticity, integrity, confidentiality, non-repudiation, attributes of the system (benevolence, competency, predictability, etc.), reputation, accreditation, authentication, approvals (e.g. advisors and guarantors), customer communities, legal requirements and authorities, experience, familiarity, risk assessment, privacy, satisfaction, and subjective assessment of trustworthiness.
Toward Establishing Customer-Supplier Trust (Ishaya and Macaulay, 2000).	Identity of the business site, offer free products or services, consistent in business, feedback, access, navigation, simple purchase procedure, assurances and recourse.
Model of Trust for e-Commerce System Design (Egger, 2000).	Business brand name, trusted third party, graphic design, layout, easy to use, system's reliability, classification schemes, terminology, information about product and services, security, privacy, tracking transaction, and post-purchase service.
Internet Consumer Trust Model (Jarvenpaa & Tractinsky 1999).	Well known, bad/good reputation, business size, biggest/smallest player in the market, person responsible, store's behaviour, and services.
Trust in Wired Americas (Cheskin Research, 1999)	Icons symbolising commerce-enabling functions, icons symbolising merchant service security, data handler, third party brand, notice to customer, facilitating interaction between individual shoppers, information of product, navigation clarity, navigation access, navigation reinforcement, protection of personal information, tracking, recourse, return policy, simplicity of process, visuals/layout, craftsmanship, resembles other trusted sites, functionality, and speed.

Table 2: Categories of trust attributes

Categories of trust attributes	List of trust attributes
Informational-based	Company name, company address, company e-mail, company telephone number, privacy policy, third party for secure transaction, third party for personal data protection, third party for website recommendation, staff name, photo of staff, photo of premises, return policy, delivery policy, order procedure, payment procedure, audio, video, animation, product brand, product price, product promotion, customer feedback, customer tracking facility, after-sales service.
Functional-based	Website layout and structure, website navigation, website performance, payment process, product handling, customer protection.
Not-classified	Accuracy, accreditation, assurances, authenticity, availability, confidentiality, consistency, completeness, competitiveness, credibility, customisation, customer communities, delivery fulfillment, durability, easy to use, experience, familiarity, financial planning, functionality, identification, integrity, interface design and contents, legal requirements, non-repudiation, quality of media transmission, reliability, reversibility, reputation, risk assessment, sales-related services, security, satisfaction, transparency, transience, unbiased, up-to-date, usefulness, and variety.

Table 3: Trust attributes and their group

Trust dimension	List of trust attributes
Merchant-trust	Company name, company address, company e-mail, company telephone number, privacy policy, third party for secure transaction, third party for personal data protection, third party for website recommendation, third party endorsement, staff name, photo of staff, photo of premises, return policy, delivery policy, customer feedback
Content-trust	Website layout and structure, website navigation, website performance, presentation of content
Product-trust	Product brand, product price, product promotion, product handling
Process-trust	Order procedure, payment procedure, customer tracking facility, after-sales service

Riegelsberger et al., (2005) emphasises the importance of good website design in the early stages. Therefore, it is important to know which trust attributes will be seen first while consumer accessing a website. Trust attributes from merchant-trust are located at the first stage of the consumer interaction, which can be considered the first step for building consumer trust. In order to identify the most important attributes in merchant-trust, the authors choose only ten trust attributes. Two criteria used in the selection i.e. trust attributes that representing company identification and privacy protection. Therefore, those ten attributes that will be used for conducting an online survey are as follows:

1. Company address
2. Company e-mail
3. Company telephone number
4. Privacy policy
5. Third party for secure transaction
6. Third party for personal data protection
7. Third party for website recommendation
8. Customer feedback
9. Staff name
10. Photo of Staff

Online Survey to Rank 10 Trust Attributes

The method used here is online survey, using an online questionnaire to collect information from the user. This survey requires the respondents to visit an e-Commerce website and from this website they will be given a set of questions. The survey comprises five stages that include setting up a survey, questionnaire design, survey implementation and data analysis

Setting up the Survey

The purpose of this survey is to identify the importance ranking of trust attributes. Before asking respondents to rank trust attributes, they should be given experience of looking for trust attributes in e-Commerce websites. This will help respondents get some idea and understand better about the role and presentation of trust attributes in the website. Six real e-Commerce websites have been selected from three different domains of e-Commerce (CD, computer, and furniture). The presence of trust attributes in the website and how easy it is to find them were used as guidelines in selecting the six websites. All of them represented small or medium businesses based in the UK featuring a relatively unknown brand. The domains are based on low-priced and small products (CD), medium-priced and medium-sized products (computer), and high-priced and large products (furniture).

The goods manipulation was intended to reflect a difference in the amount of risk involved in the transaction, as trust is only understood in terms of some associated, underlying risk (Mayer et al., 1995). The assumption underneath this manipulation is that goods type and risk perception are correlated. CDs are relatively inexpensive, standard objects, which can easily be returned to the vendor if deemed unsatisfactory. Consequently, buying a CD should be perceived as less risky than purchasing computers or furniture. Computer products are more expensive, but they still tend to be standard objects that can be easily exchanged (medium risk). Purchasing a piece of furniture online is assumed to generate higher risk perception, because of their cost, variance and dimension. Two websites have been assigned from each of the three domains. Table 4 provides URLs of the websites and domain of e-Commerce.

Table 4: Selected e-Commerce website for the survey

Domain	Risk	Attributes Number	URL	References
Music CDs/DVDs	Low	High (N=6)	http://www.thehut.com	CD_high
		Low (N=4)	http://www.cdjungle.com	CD_low
Computer product	Medium	High (N=7)	http://www.simply.co.uk	Co_high
		Low (N=4)	http://www.idealcomputing.co.uk	Co_low
Furniture	High	High (N=7)	http://www.furniture247.co.uk	Fu_high
		Low (N=4)	http://www.sofaclassics.co.uk	Fu_low

In the survey, every respondent agreeing to take part was randomly linked to one of the six websites. Respondents were asked to spend five to seven minutes exploring the website. The respondent's main task was to look for trust attributes and pretend to buy. To pretend to buy, the respondent placed an order by selecting one product, adding to the basket, checking the total price and lastly canceling the order. After completing these tasks, respondents were given a set of questions about the presence of trust attributes in the website, how easy it was to find them and how much trust they had in the given website.

Design of the Questionnaire

There are three parts to the questionnaire: demographic questions, questions about the website, and questions about the importance ranking of trust attributes. Close questions such as 'Do you agree or disagree?' are implemented in all parts of the survey. This means that respondents only select one of the provided alternatives. The next three sub-sections provide a detailed explanation of each part of the questionnaire.

Demographic Questions

The purpose of the demographic questionnaire is to provide a profile of the respondent. Common demographic questions include gender, age, current location, interests, and experience related to the survey. In this part, seven questions have been given: gender, age, where they live, years of Internet experience, years of buying online, frequency of buying online, and recent history of buying a product according to the domain of e-Commerce.

Questions about the Website

The questions about the website were designed to give respondents an idea about the presence of trust attributes in a website. A set of questions is given to the respondents after they have visited the website, grouped into two sections i.e. Section 1 and Section 2. Section 1 (see **Figure 1**) focuses on the question about the presence of trust attributes in the website and how easy it is to find those attributes. Ten questions are put to the respondent, with three response alternatives provided to each question: YES, NO and DON'T KNOW. Response to how easy the trust attributes are to find are based on five Likert-scale points (1 to 5). 1 indicates a negative response to the question, i.e. very difficult to find, and 5 indicates a positive response, very easy to find.

Figure 1: Section 1 of the questionnaire

Section 2 provides eight questions. The first five are about the degree of the respondent's trust in the website, and the last three are about the nature of trust attributes such as 'I found the privacy policy content easy to understand'. The response alternative is also based on Likert-scale points (1 to 5); 1 represents a negative response to the question, i.e. strongly disagree, and 5 indicates a positive response, strongly agree. For the last three questions, the option NOT AVAILABLE is provided, together with the five-scale level of agreement. Section 2 of the questionnaire is shown in **Figure 2**.

Figure 2: Section 2 of the questionnaire

Questions about the Importance Ranking of Trust Attributes

This part is considered important because it directly reflect the objective of the survey. The questions in this part provides ten questions concerning to what extent respondents think each trust attribute can build user trust in the website (see **Figure 3**). Five Likert-scale points (1 to 5) were used; 1 indicates a negative response, not important, and 5 indicate a positive response, very important.

Figure 3: Questions about the importance ranking of trust attributes

Data Analysis

The survey was open to the public for ten days from 9 to 18 December 2004. About 7,760 people were contacted via e-mail to invite them to take part in the survey, and after one day the survey had 869 respondents. This figure showed that it would be possible to achieve the target number, 1,200. In this survey, a prize of £500 in cash was offered. For the data analysis, the structure of the analysis follows the structure of the questionnaire used. The next three sub-sections provide descriptions of each part of the analysis.

Analysis of Demographic Questions

The total number of respondents taking part in this survey was 1,230, with a majority (62%) of females. 90% of respondents were below fifty-five years of age. The distribution of the respondents seems standard for each age group except for the age group above 55.

For the analysis of where the respondents come from, more than half (56%, 696) are from North America. The second largest group is from the United Kingdom, which received 204 respondents. The distribution of the respondents is not standard for each part of the world. 55 were from other EU countries, 11 from South America, 161 from Oceania, 98 from Asia, and only 5 from Africa.

For the analysis of years of experience using the Internet, most of the participants (89%) have more than four years' experience, and only 25 have less than one year. 110 respondents fall into the group 2-3 years, 239 4-5 years, 356 6-7 years, 206 respondents fall in group 8-9 years, and 294 said that they have used the Internet for more than 10 years. This indicates that most respondents are familiar with the Internet and most likely they are familiar with the term Internet privacy and security. This background is helpful to the survey because it need respondents who are familiar with Internet technology.

In the analysis of years of online buying experience, 96% of respondents have been involved in buying online. Only 41 respondents said they never buy online. It is therefore not difficult for the respondents to understand the purpose and instructions of this survey.

For the analysis of frequency of buying online, categories 'once a month' and 'once a week' received a high response, respectively 402 and 148 respondents. 97% of respondents have experienced buying over the Internet. Only 39 respondents said that they have no experience in online buying. This distribution is advantageous to the survey because majority of the respondents have been exposed to the process of Internet transaction and most likely to related issues.

In the analysis of the buying history, we can see that in the month before taking part in the survey, about 50% of respondents bought music CDs/DVDs and computer products online. About 125 respondents said that they had bought furniture via the Internet within a month of the survey start date. When looking at the offline buying activity, each product received a high volume of sales. For music CDs/DVDs and computer products, more than half the respondents bought both products. For furniture, nearly half (46%) had bought furniture via traditional commerce within a month from the survey. In sum, these three products are familiar to the respondents and confirm that the choice of these products for the survey was suitable.

Analysis of the Questions about Exploring the Website

In this part, respondents were given a website to look for some trust attributes, and pretend to make an online purchase. The purpose of this task is to give the respondent some idea, experience and knowledge about the nature and role of trust attributes in the website. After the respondents completed exploring the website, a set of questions about the website was given to them (see **Figure 1**). For common attributes like email and company telephone number, most respondents provide correct answer. There is a problematic for the attributes like third party for secure transaction and recommendation by third party. This is because participants were more likely to answer 'do not know' than to answer correctly. This poor performance can be due to several factors, including misunderstanding (participants may have not known exactly what to look for), lack of in-depth analysis of the website, memory failures or interferences.

Analysis of the Ranking of Trust Attributes

This section is about to rank trust attributes according to the user opinion. Mean, standard deviation (SD), and mode are the statistical measurements used in the analysis. Mean and SD have been derived from the scale used in the questionnaire: positive response represented by 5 and negative response by 1. The higher the mean value, the more significant are the trust attributes, and the lower the mean, the less important are they. Where two trust attributes have the same mean value, the SD will be used to determine which one is more important. The higher the SD, the less important is the trust attribute, and the lower the SD the more important is the trust attribute. The mode is the most frequently occurring value in the set of data. In the analysis, the mode value is determined by looking at the positive response represented by 5. The higher the number of repondents in positive response 5, the more significant are the trust attributes, and the lower number of repondents in positive response 5, the less important are they. In a situation where two trust attributes have the same number of respondents, the second highest that represented by 4 will be used to determine which one is more important. **Table 5** shows the number of respondents replying to how important are the trust attributes in building user trust in a website.

Table 5: Importance ranking of trust attributes

Trust attributes	Response from the respondents					Mean	SD	Ranking Mean	Ranking Mode
	1	2	3	4	5				
Company address	21	31	126	280	772	4.42	0.81	4	4
Company telephone number	10	22	78	252	868	4.58	0.57	1	1
Company e-mail addres	9	26	113	273	809	4.50	0.65	2	2
Privacy policy	11	24	118	291	786	4.48	0.67	3	3
Third party for secure transaction (e.g. VeriSign)	15	35	148	322	710	4.36	0.79	5	5
Third party for personal data protection (e.g. Truste)	17	46	224	320	623	4.21	0.92	6	6
Recommendation of website by a third party (e.g. Shopsafe)	35	96	295	335	469	3.90	1.18	8	8
Consumer feedback form	44	71	295	346	474	3.92	1.17	7	7
Specific staff name and contact number	91	140	283	300	416	3.66	1.57	9	9
Photos of staff	364	250	337	123	156	2.56	1.8	10	10

Based on **Table 5**, the importance ranking of trust attributes have been identified that based on mean and mode. Trust attribute company telephone number is considered the most important trust attribute in building user trust in a website. The least important trust attribute is photos of staff followed by trust attribute specific staff name and contact number. Both

attributes have a low mode value compared to other attributes. The importance ranking of all trust attributes seems consistent using mean and mode technique.

Conclusion

Trust is considered a key factor for the continued growth and success of E-Commerce. However, the process of building consumer trust in E-Commerce is still in its infancy, although some previous studies have provided significant insights into the nature and structure of this field. This paper contributes to the field of e-Commerce trust by providing list of trust attributes that are grouped into four trust dimensions and also provides the importance ranking of ten trust attributes. These ten attributes can be include at the first page of e-Commerce website in order to communicate the trustworthiness of e-Commerce website. Furthermore, further studies also can be carried out based on these ten trust attributes as follows:

- Investigate how these ten attributes can be found in a website? Does its location contribute differently to the user trust?
- Investigate the content and format of each trust attribute. Does its content and format contribute differently to the user trust?
- Develop a tool to help consumer to look for the existance of these attributes in e-Commerce website. Can trust assessment approach be developed using the ranking of these ten trust attributes?

References

Basso, B., Goldberg, G., Greenspan, S., and Weimer, D. *First Impressions: Emotional and Cognitive Factors Underlying Judgments of Trust Ecommerce.* In Proceedings of the 3rd ACM conference on Electronic Commerce, Tampa, Florida, USA, 2001, pp. 137–143.

Blanger, F., Hiller, J. S., and Smith J. W. *Trustworthiness in Electronic Commerce: The Role of Privacy, Security, and Site Attributes.* Journal of Strategic Information Systems (11), 2002, pp. 245-270.

Cheskin Research and Studio Archetype/Sapient. (1999). *eCommerce Trust Study.* http://www.studioarchetype.com/cheskin/assets/images/etrust.pdf, Retrieved Sept. 9, 2002.

Che-Hussin, A. R. and Macaulay, L. *Trust Agent for E-Commerce: Looking for Clues.* IEEE International Conference on e-Technology, e-Commerce, e-Service, Hong Kong, 2005, pp: 286-289.

Che-Hussin, A. R., and Macaulay, L. *Personal Trust Agent for Ecommerce.* Proceeding of CollECTer (Europe), Galway, 2003, pp. 168-177.

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

Dekleva, S. (2000). *Electronic Commerce:A Half-Empty Glass?.* Communications of the Association for Information Systems (AIS) (3:18), 2000l, pp. 1-99.

Doherty, J., Keeling, K., Newholme, T. *HiSPEC: Human Issues of Security and Privacy in ECommerce*, Technical Report, Deliverable 4.3 Rules of Trust, UMIST., 2000.

Egger, F.N. *Towards a Model of Trust for E-Commerce System Design*. In Proceedings of the CHI 2000 Workshop Designing Interactive Systems for 1-to-1 E-commerce, Zurich., 2000.

Gefen, D. *Reflections on the Dimensions of Trust and Trustworthiness Among Online Consumers.* ACM SIGMIS Database (33:3), 2002, pp. 38–53.

Hoffman, D. L., Novak, T. P. and Peralta, M. *Building Consumer Trust On-line.* Communication of the ACM (42:4), 1999, pp. 80

Georgiou, C. J. and Stefaneas, P. S. *Strategies for Accelerating the Worldwide Adoption of Ecommerce.* Communications of the ACM (45:4), pp. 145-151.

Ishaya, T. and Macaulay, L. (2000). *Towards Establishing Customer-Supplier Trust.* Electronic Commerce: 13th Bled Electronic Commerce Conference Slovenia, 2000.

Jarvenpaa, S.L. and Tractinsky, N. *Consumer Trust in an Internet Store: A Cross-Cultural Validation.* In Journal of Computer Mediated Communication (5:2), 1999, pp. 1-35.

Kim D., Song, Y., Braynov, S., Rao, H. *A B-to-C Trust Model for On-line Exchange.* Americas Conference on Information Systems, Boston, 2001, pp. 784-787.

Mayer, R., C. and Davis, J.H. *The Effect of the Performance Appraisal System on Trust in Management: A Field Quasi-Experiment.* Journal of Applied Psychology (84:1), 1999, pp. 123-136.

Mayer, R.C., Davis, J.H. and Schoorman, F.D. *An Integration Model of Organizational Trust.* Academy of Management Review (20:3), pp.709-734.

McKnight, D.H and Chervany, N.L. *The Meaning of Trust.* A Management Information Systems Research Center (MISRC) working paper series, Available at: http://www.misrc.umn.edu/wpaper/wp96-04.htm, Retrieved Nov. 25, 2002.

Menasce, D.A. *A Reference Model For Designing An ECommerce Curriculum.* IEEE Concurrency (8:1), 2000, pp. 82 -85.

Pavlou, P. A. *The Role of Impersonal Trust in B2B Ecommerce.* In Business to Business Ecommerce: Challenges and Solutions, M. Warkentin (Ed.), Idea Group Publishing, Hershey, PA., 2001.

Pavlou, P.A. and Chellappa, R. K. *The Role Of Perceived Privacy And Perceived Security In The Development Of Trust In ECommerce Transactions.* Department of IOM, Marshall School of Business, University of Southern California, Los Angeles, 2001.

Riegelsberger, J., Sasse, M. A. and McCarthy, J. D. *The Mechanics of Trust: A Framework for Research and Design.* International Journal of Human-Computer Studies (62:3), 2005, pp. 381-422.

Riegelsberger, J., Sasse, M. A. and McCarthy, J. D. *The Researcher's Dilemma: Evaluating Trust in Computer-Mediated Communication.* International Journal of Human-Computer Studies (58:6), 2003, pp. 759-781.