

WISDOM ON THE WEB: ON TRUST, INSTITUTION AND SYMBOLISMS

A Preliminary Investigation

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Abstract: Trust in W-MIE is fairly new and risks associated with it are novel to users. Consequently, the question on how to design technological artefact, in this case the information that is perceived trustworthy which can be understood, rationalized and control as part of the interface design strategy is not well understood. This becomes our primary aim of this research. We seek to explicate the role of trust from the explicit institutional theory and semiotic paradigm to maximise the 'goodness of fit' for future construction of sensitive information system within a culture or domain through the analysis of its social context, pragmatic and semantic levels of signification. We contend that institutional design features could make the alignment between formal and informal signs of trust to match their meanings through shared norms, assumptions, beliefs, perceptions and actions. In this preliminary study, we used card sorting to explore on users trust perception of institutional signs operationalized in web based information for Islamic content sharing sites. These institutional signs are conceptualized under the four dimensions of institutional symbolisms: content credibility, emotional assurance, brand/reputation and trusted third party. The results were cross referenced with the initial framework for its similarities and differences.

1 INTRODUCTION

Today, consumers are not only involved in the interpersonal or inter-organizational transaction within the electronic exchange model but also in the knowledge transactions and exchanges within the information exchange mode (Forray, 2004). Trust in information conforms to the interpersonal model of trust. It is a social attitude towards a technological artefact, in this case the electronic information or document such as web page or electronic article (Chopra and Wallace, 2002). The term web mediated information environment (W-MIE) refers to the activities involved in acquiring, seeking and disseminating information on the web (E.N.M., Ibrahim et. al., 2007). This is due to the growing number of websites that offer information e.g. on

health, legal, financial, religion, political, career and relationship. The existence of these sites are some of the evidence where consumers are extending their web usage to present and acquire knowledge that affect their personal lives regardless of context as well as establishing personal and organizational connections. Although these services facilitate people with information, the issues concerning the original and the copy, fraudulent behaviour, forgery identity and deceptions (Forray, 2004) has made the information available on the Internet rather transparent. It brings about several risks that are either caused by the uncertainty of using open technological infrastructure for the information exchange or can be explained by the conduct of users who are involved in the transaction activity (Krauter-Grabner and Kaluscha, 2003). Hence,

deliberate users trusting decision to use their own knowledge to evaluate the information in its own terms. This gives way to our initial assumption on how to design an information artefact that is perceived trustworthy within sensitive information settings, which can be understood, rationalized and control as part of the overall interface design strategy. While many criteria are applicable for evaluating informational websites through the quality indicators (Chopra and Wallace, 2003; J.E. Alexander and M.A. Tate, 1999) and credibility perceptions (Fogg and Tseng 1999; McKnight and Kacmar, 2006) however some of the works are being criticised because the operationalization of trust was not understandable (Krauter-Grabner and Kaluscha, 2003). On the other hand, the perspectives of trust has been constraint and limited to the current signifiers of trustworthiness within the context of e-tailing specifically in the business to business (B2B) and business to commerce (B2C) environment (Krauter-Grabner, and Kaluscha, 2003). Much of this work is dedicated to establish guidelines for increasing the perceived or factors of trustworthiness through interface elements (Wang and Emurian, 2004; Cheskin, 1999), measuring the impact level of trust and trustworthy behaviour (Benamati, et. al., 2006), developing technologies for encryption, validation, authentication etc. (Pavlou and Gefen, 2004; Ratnasingam and Pavlou, 2004) and recent interest on cross cultural communication within e-commerce context (H. Liao et. al., 2006). However, these studies are insufficient. We believe the solutions would be to understand the trust operationalization in a holistic manner by taking the assumption of human forces, focusing on those parts of the system directly experienced and understand by the ordinary people. What we really need is an integrated knowledge and understanding of two critical values – *institutional and cultural* so that designers could make the alignment between formal and informal signs of trust between transacting parties in order to find common heuristics and framework in which the information domain reside. Thus, we support the notion that trust could also be posited in non technical mechanisms that safeguard interaction on the web (Riegelsberger et. al., 2005). In the literature, ‘soft’ trust dimension (Krauter-Grabner and Kaluscha, 2006) or known as ‘intangible’ trust (French et. al., 2007; De Souza, 2005) are equally diverse field on trust formation that takes into account on emotional and cognitive models as well as psychological studies that accounts for empirical, semantic and pragmatic levels of trust semiosis (Egger, 2000). Related

studies have established that consumer perceptions of online trust and credibility are often determined by a user’s irrational, emotional response to site aesthetics and surface level signs (Fogg, et. al., 2001; Kim and Moon, 1998). The work of Riegelsberger, et. al. (2005) elaborated on the account for contextual and intrinsic properties in which serves to highlight the need for designers to better understand new ways of signalling these properties within e-mediated environment. His studies explored the applicability of signalling theory to B2C e-commerce trust perceptions, an important breakthrough in our understanding of trust signalling as between trustor and trustee. Works of French et. al. (2007) and De Souza (2005) points to the need for theories that can bring together consumers and e-service providers through the interface and identifies semiotic engineering as a key step in the design and evaluation of tangible and intangible trust. Of our interests, in this paper we extended our work in E.N.M., Ibrahim et. al. (2007) that established a conceptual framework of institutional symbolism and its underlying four dimensions (*content credibility, emotional assurance, trusted third party and brand/reputation*) via explication of institutional theory and symbolic interaction. It looked at the aspect on the ‘soft’ trust dimensions underpinning institutional structure driven by cognitive and affective elements of institutionalized properties. The approach is based on the understanding of social norms and individual affordances. This makes it easier for human to reason about trust online by interpreting or perceiving the trustworthiness of information through the institutional ‘signalling’ standpoint rather the knowledge or understanding of effective IT mechanisms for self protection on the Internet. Hence, the empirical work presented here is to explore the pragmatic aspects of institutional symbolism properties from the users’ perception on trust within sensitive information context. In this case, the operationalization of institutional trust takes place within web based information for Islamic content sharing sites environment. Our reasons are twofold: first, it introduces a critical process of meaning making and trust constructions on the level of users, a particular set of communicators having its own unique identities, language systems of non verbal communication, cultural material, history and social structure. We believe this is an audience whose requirements online offerings attempt but fail to address. Second, the context is relevant to HCI in the sense that it provides understanding by capturing non functional user requirements, especially where

these non-functional requirements are culturally or otherwise imbued makes a significant difference to user centric design.

2 THEORETICAL FRAMEWORK

2.1 From Institutional Theory to Institutional Trust

In general, institutional structure is seen as a domesticating system within a cultural container governed the specific procedures and operations to ensure the stability of an environment or situation by imposing norms risk censure, punishment and/or marginalization imposed and uphold by the social actors. It provides the infrastructure for both the skills and the tools available to help users deal with the issues of trust in the offline environment for example trust placed on the government, education and legal systems in which individual interact in their everyday's life. Institutional theory fills a gap by arguing that much of the environment consists of social and cultural forces rather than the production of resources and task-related information. It considers the processes by which structures, including schemas, rules, norms, and routines, become established as authoritative guidelines for social behaviour and to provide environment stability (Scott, 2004). These institution elements were transmitted by various types of carriers, including symbolic systems, relational systems, routines, and artefacts. However, our interests were on the 'symbolic interaction' where rules, laws, values and expectations yield the process and structure of a system and the internalization of the artefact used within the system. Our key challenge of describing trust operationalization within sensitive information context as institutional elements lies in the understanding of what '*social legitimacy*' means to safeguard trustworthy interaction between the user and the information presented; and how designers could impose the legitimacy. In the IS literature, the notion of institution is encapsulate within institutional trust (McKnight et. al., 1998), system trust (Chopra and Wallace, 2002), reputed credibility (Fogg et. al., 1999) and control trust (Tan and Thoen, 2000). It is seen as relevant and appropriate to examine communication where individual need to generalize their trust to organization made up with people whom they have low interdependence, low familiarity and low continuity of interaction. This is where the sense of a community with common

values is lacking. Such a community does not currently exist online because of varying cultural understanding and values (Zucker, 1986). Current conceptualization of institutional trust is seen as a backdrop that envelopes and safeguards interaction based on the perception that effective IT enabled mechanisms are in place varying in its problems and dimensions as found in these prominent works (Pavlou and Gefen, 2004; Tan and Thoen, 2000; Ratnasingam and Pavlou, 2004). However, trust in W-MIE is not simply oriented to interpersonal and inter-firm research context where much of current trust research applies (Gefen et. al., 2005). It is also not a question of developing more sophisticated technologies, rather it is '*organizational*' (Gefen et. al., 2005) that are characterized by the elaboration of rules and requirements to which information designers must conform in order to receive '*legitimacy*' or support in managing information on the web.

2.2 From Symbolic Interactions to Semiotic of Trust

Symbolic interactionists believe that there is no objective or inherent meanings embedded in a text, but that meanings are socially constructed creations within a particular culture or society. Based on Bandura's (1986) social cognitive perspective, individuals are imbued with capabilities that define what it is to be human and one of it is to 'symbolize'. By drawing on their symbolic capabilities, human can extract meaning from their environment, construct guides for action, solve problems cognitively, support forethoughtful courses of action, gain new knowledge by reflective thought, and communicate with others. Symbolizing also enable people to store the information required to guide future behaviours that one can anticipate the consequences of an action without actually engaging in it. While, symbolic interaction examines the creation of meaning through interaction with symbols; semiotics takes that examination to the level of science that relates to the 'fundamentals of information' (Stamper, 1995). Semiotics maintains that the construction of meanings depends in part, on the context of the sign in relation to the interpreter and the culture in which both are situated. Semiotic does not recognize that any particular sign is truly 'universal', rather it depends on the context: both local and global. This implies the information is mediated by signs and their meanings would vary in different culture which stands to somebody for something; in some respect or capacity; in some

community or social context (Stamper, 1995). This allow signs to be treated as governing its own principles, the context it emit and receive and the determinant of their content where applicable. For example, here we see a sign (a clock), which “is essentially “incomplete” until it has an “interpretant” or a context that an agent (or interpreter) creates meaning or content from the sign (embedded in its interpretant), see Figure 1.

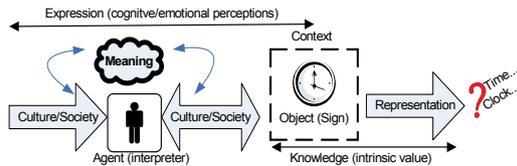


Figure 1: Sign Meaning Making Process.

The culture and social context is seen to have some influence on the interpreter to correspond with the sign meaning and thus influence the creation of the meaning to that particular sign. It can be said that the sign possess its own objective and maintain its own intrinsic value of trustworthiness within its context. Here, knowledge evolves through the interpretation and the simultaneous integration of information and context between the interpretant and the sign is gained by or developed through a multitude of selected, assessed and critically reviewed information, a stimulus derives from the cognitive and affective assessment of trust indicators. This leads to an understanding of trust as a mental structure consisting of the subjective and objective perceptions that individual hold and accept as true. In this sense, trust in information is a semiosis process concerning the ability of the user to perceive signs via rational or irrational responses that are contextually bound.

3 INSTITUTIONAL SYMBOLISMS

In order to account for the semiosis process of trust in information where signification render the users complex cognitive and affective comprehension, the notion of institution is encapsulate within a system of representation and symbols defined as *institutional symbolisms*. Institutional symbolisms is a visible, physical manifestation of the institutional characteristics, behaviour and values represented by *trust marks*; signs that depict and present connoted message of some ‘assurance’ which signified under these four dimensions and its underlying properties

(E.N.M., Ibrahim et. al., 2007), see Table 1. This assurance implies the sense of ‘*legitimacy*’ that safeguards the overall impersonal structures and situations on the web in which the information domain reside. It implies that the symbols carry its own disposition and meaning, the trust warranting properties manifested via textually or graphically presented on the website. In this sense, institutional symbolisms are seen as a form of social trust where trust is initiated from its social mechanism, behaviour and values through the means of symbolic representation.

Table 1: The Framework of Institutional Symbolisms Trust Inducing Features (adapted from E.N.M., Ibrahim et. al., 2007).

Dimensions	Values	Measurements
Trust marks that reflect third party assurance or seals of approval.	A belief that it will perform a particular action, to monitor or to control that certain acts and behavior is warranted.	Trust marks that symbolized: 1. Protecting privacy 2. Providing security 3. Demonstrating consumer satisfaction 4. Providing reliability 5. Providing assurance or guarantee.
Trust marks that reflect credibility of the web content	A belief that it has the ability and competency to carry out the obligations.	Trust marks that symbolized: 1. Competence (knowledge, expertise and skill). 2. Reliability (accuracy, currency, coverage and believability). 3. Predictability (stability of information).
Trust marks that evoke emotional assurance or security.	A belief that it will provide a sense of comfort that is reflective, thoughtful and careful.	Trust marks that symbolized: 1. Benevolence (goodwill and objectivity) 2. Honesty (validity and, openness). 3. Integrity (fiduciary obligations).
Trust marks that reflect trustworthy expectations derived from the message.	A belief that it signifies positive or prominent identities and values.	Trust marks that symbolized: 1. Reputation - Offline reputation 2. Brand - Brand Image - Brand Personality

4 RESEARCH METHODOLOGY

4.1 Card Sorting Technique

Card sorting is one of the methods used in psychology research to uncover cognition representation that used indirect approach to probe non-functional quality aspects of websites (French et. al., 2007). It is an empirical investigative technique conceived within the field of personal construct theory developed originally by Kelly (1955). The theory posits the ability of human beings to self-describe their own categorization(s) that impart the individual cognition and meaning making process with a high reliability and validity. This is a knowledge elicitation technique commonly

used in the human factors field to gain insight into the mental models of users (Faiks and Hyland, 2000). More specifically, the approach is intended to reveal the so called tacit or semi-tacit knowledge especially when the subject is unable to articulate using a direct verbal questioning approach. In addition, it has proven to be a highly effective and valuable method for gathering user input especially prior to total system design (Faiks and Hyland, 2000) or low fidelity artefact of computer based signs at the website level (De Souza, 2005). The focus of this study is to uncover how trustworthy information is perceived. Our empirical investigations used the 'closed card sorting' technique to probe the users trust perceptions of institutional signs embedded within sensitive information web based content rather than trust *per se* as the subjects are not exposed to risk. This includes first encounters prior brand exposure or simply first encounters with the brand. This is because a typical user will include those with prior brand knowledge as well as those who are simply encountering the site through online search and competitor inspection (Nyshadham and Ugbaja, 2006). As we already have a pre-defined set of categories, in this study we want to learn how users sort institutional elements into each category. These elements are assumed to have some semantic meaning that captures the user's cognitive structure. The results will allow us either to add new content or eliminating existing content to an existing structure. Briefly, in this method, we first identified a set of institutional objects based on prior literature within trust e-mediated studies. We extended the framework of institutional symbolisms trust inducing features and came up with a total of 34 elements (see Table 2) which contains a preliminary list of institutional objects derived from synthesizes of existing literatures.

4.2 Context of Study

For the operationalization of the institutional dimensions, web based information for Islamic content sharing sites were chosen. In this research, we refer the Islamic content sharing sites as websites that highlight information, knowledge and services, be it commercial or entertainment in nature that reflect Islamic ideologies, content, norms or values. We believe the Islamic context offer interesting view on the investigation of this institutional phenomenon as Islamic principles rely much on the legitimacy governed by its cultural cognitive, normative and regulative elements, both formal and informal. It is

somewhat consistent with the mechanisms of supporting and restricting social behaviour as the key ingredients of institutional theoretical foundation. In this study, the subjects were presented with two static images of *e-halal* homepages from Malaysia and Singapore (see Figure 2 and 3). These homepages are basically the official websites that disseminate information pertaining to *halal* products and services in its respective countries. The subjects were asked to think about any trust elements that come across into their mind when browsing or searching for *halal* information on the web. Subjects are given cards showing the institutional elements with an established initial set of primary groups. Then they are asked to place cards into these pre-established primary groups based on their own understanding and perception. Some of these elements refer to the presence or absence on both the websites.



Figure 2: Islamic Religious Council of Singapore (www.muis.gov.sg/cms/index.aspx).



Figure 3: Department of Islamic Development Malaysia (www.halaljakim.gov.my).

4.3 Participants

A focus group of 15 users participated in this study. According to Nielsen (2004), testing 15 users for card sorting are good enough for most practical purposes. Our participants consist of 10 females and 5 males between the ages of 25-40, having at least a bachelor degree qualification and have participated in online transaction activities for at least 2 years. In this study, we used subjects that have previous experiences in online transaction activities because they would already have well developed schema for offline risks (Nyshadham and Ugbaja, 2006). We also preferred to have educated people because it is to be said more likely to have some experiences with technology (Nyshadham and Ugbaja, 2006).

5 RESULTS – OVERVIEW

Table 2: Summary of Card Sorting Analysis.

No	Institutional Elements	Mean	Card Placement %	User's Category	Current Category	Average Card Agreement %
1	Organization Values	0.53	50	EA	CC	34
2	Site Purpose	0.33	45	BR	CC	
3	Domain Name	0.47	64	BR	CC	
4	Organization Trademarks	0.47	50	BR	CC	
5	Content Authorships	0.33	29	CC	CC	
6	Sources	0.40	46	BR	CC	
7	Site Navigation	0.47	54	CC	CC	
8	Links	0.40	55	CC	CC	
9	Language	0.40	55	CC	CC	
10	Accuracy	0.80	80	CC	CC	
11	Currency	0.73	73	CC	CC	
12	Past Experiences	0.27/ 0.27	33	CC & BR	CC	
13	Attributions	0.60	64	CC	CC	
14	Site Disclosure	0.33	43	CC	CC	
15	Design and Layout	0.40	50	CC	CC	
16	Content Believability	0.80	86	CC	CC	
17	Organization Social Role and Functions	0.40	54	BR	CC	
18	Organization Positive Intentions	0.40	46	EA	EA	22
19	Site Professionalism	0.47/ 0.47	31	BR & TTP	EA	
20	Site Privacy and Confidentiality	0.47	47	TTP	EA	
21	Information Legitimacy	0.33	43	CC	EA	
22	Upfront Disclosure of Customer Relationships	0.40	54	EA	EA	
23	Site Fulfilment	0.33	38	EA	EA	
24	Security Policies	0.47	54	EA	EA	
25	Feedback Mechanisms	0.20	31	BR	EA	
26	Demonstrating Users Satisfaction	0.47	58	TTP	TTP	27
27	Provide Third Party Security	0.60	77	TTP	TTP	
28	Provide Third Party Privacy	0.80	80	TTP	TTP	
29	Disclosed Policies and Practices	0.67	67	TTP	TTP	
30	Content Reliability	0.47/ 0.47	43	CC & TTP	TTP	
31	Perceived Organization's Ability	0.60	69	BR	BR	33
32	Brand Image	0.80	87	BR	BR	
33	Brand Personality	0.67	85	BR	BR	
34	Offline Reputation	0.67	77	BR	BR	

Abbreviations: CC (Content Credibility), BR (Brand and Reputation), EA (Emotional Assurance), TTP (Trusted Third Party)

From Table 2, we could summarized that content credibility dimension is represented by the following elements: content authorships, site navigation, links, language, accuracy, currency, attributions, site disclosure, design and layout, content believability, past experiences, information legitimacy and content reliability. It can be observed that the element of accuracy and content believability scored higher with (M=80). We obtained 34% of average cards agreement compare to the current category. While, elements of organizational values, organization's positive intentions, upfront disclosure of customer

relationships, site fulfilment and security policies represented the emotional assurance dimension. In this category we obtained only 22% of average card agreement from the participants and organizational values (M=53) were seen as the most important element of emotional assurance. For trusted third party dimension, elements of site professionalism, site privacy and confidentiality, demonstrating users' satisfaction, providing third party security, providing third party privacy, disclosed policies and practices and content reliability were selected under this category. We achieved only 27% of average

card agreement under this category. In addition, it is shown that, providing third party assurance for privacy related information (M= 80) is the highest concern among other elements appeared under trusted third party dimension. The result was somewhat consistent with the rising concerns regarding privacy protection for both individual and organization on content and information dissemination within e-mediated services (Egger, 2000; Chopra and Wallace, 2002; Krauter-Grabner and Kaluscha, 2006) and further heightened in the information environment (Forray, 2004). Under the brand/reputation dimension, elements of site purpose, domain name, organization trademarks, sources, past experiences, organization social role and functions, site professionalism, feedback mechanisms, perceived organization's ability, brand image, brand personality and offline reputation were selected by the participants to represent this category. We obtained 33% of average card agreement within this category. Brand image (M=80) were seen as the most important element followed by brand personality and offline reputation (M=67). This emphasizes that when a person perceives the brand name or symbol; it is the interplay of the associations of the branded object that manifests as image constructed by the user which in turn influence the reputation of an organization in general. Brand image bears great potentialities to strengthen trust (Einwiller, 2003). An interesting observation, it can be seen that some elements appeared in two categories. Past experiences appeared both under brand/reputation and content credibility. This is probably because past experiences with an organization is seen as important facilitator that gives reputations the power to reduce uncertainty and serve as a means to engender trust. This implies that knowing a good reputation of a trustee, in this case the information provider reduces the trustor's uncertainty and enhances his or her positive expectation. In addition, content reliability appeared under both trusted third party and content credibility dimensions, given (M=0.47). This is probably due to user's confidence exists because they expect the information to be reliable and valid. Hence, effective action to increase the level of confidence in the information must also include assurance and monitoring by the third party. Site professionalism (M=0.47) also appeared in two categories, trusted third party and brand/ reputation. This might indicate that the appearance of trusted third party assurance symbolize a site professionalism and in turn increase the level of its reputation.

6 CONCLUSIONS AND FUTURE WORK

As stated earlier the objective of this research is to uncover the user's trust perception on institutional dimensions and its underlying properties within sensitive information context. The result of this research yields preliminary empirical evidence that trust in information within sensitive domain resulted on the concern of the content credibility and the familiarity with the brand/reputation of the trustee. However, emotional assurance seems to be less significant for assessing the trustworthiness of information when comes to sensitive content. It did not support the idea that emotionally charged topics such as related to one's religion may induced the affective response of the users (Chopra and Wallace, 2002). Pending further analysis should explore on the semantic meaning represented by these institutional dimensions and its underlying properties to reach a conclusive finding, as these dimensions are perceived and interpreted differently by different subjects. Hence, further analysis can potentially reveal new dimensions. However, some of the limitations need to be highlighted. Due to the huge population of the Muslims with different ethnic groups, the research is unable to capture the perceptions of trust of the general order. In addition, what we present here are the 'possible dimensions' of trust that exist amongst Islamic communities and not as something definitive. Nevertheless, we contend that designing information artefact should consider cultural aspect in which the information domain resides because the culture within which a person operates would have shaped his or her perception of trust. Hence, creating the right appearances on the web by imposing online legitimacy, appropriate communication styles and languages are some of the integral issues for the designers to consider in developing information systems for sensitive information context.

REFERENCES

- Alexander, J. E., and M. Tate. (1999). *Web wisdom: How to evaluate and create information quality on the Web*. Mahwah, NJ: Lawrence Erlbaum.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*, Prentice-Hall, NJ.
- Benamati, J., Serva, M. A., and Fuller, M. A. 2006. Are Trust and Distrust Distinct Constructs? An Empirical Study of the Effects of Trust and Distrust among Online Banking Users in *Proceedings of the 39th*

- Annual Hawaii international Conference on System Sciences* IEEE Computer Society, Washington, DC.
- B.J. Fogg and Shaw Tseng. (1999). The Elements of Computer Credibility in *Proceedings of ACM CHI 99 Conference on Human Factors in Computing Systems*, v.1. pp. 80-87, New York: ACM Press.
- Cheskin Research and Studio Archetype/Sapient, 1999. *eCommerce Trust Study*. <http://www.studioarchetype.com/cheskin/>
- Chopra, K., and Wallace, A.W. (2002). Trust in Electronic Commerce in *Proceedings of the 36th Hawaii International Conference on System Sciences (HICSS'03)*.
- D. Harrison McKnight and Chuck Kacmar. (2006). Factors of Information Credibility for an Internet Advice Site in *Proceedings of the 38th Hawaii International Conference on System Sciences (HICSS'06)*.
- Egger, F. N. (2001). Affective design of e-commerce user interface: How to maximize perceived trustworthiness in *Proceedings of the International Conference on Affective Human Factors Design*. London: Academic Press.
- Emma Nuraihan Mior Ibrahim, Nor Laila Md. Noor, Shafie Mehad (2007). "Seeing Is Not Believing But Interpreting", Inducing Trust Through Institutional Symbolism: A Conceptual Framework for Online Trust Building in a Web Mediated Information Environment in *Proceedings of the 12th Human Computer Interaction, Beijing, China*. HCI (9): 64-73
- Einwiller, S. (2003). When reputation engenders trust: An empirical investigation in business-to-consumer electronic commerce in *Electronic Markets*, 13, 3, 196-209.
- Faiks, A. & Hyland, N (2000). Gaining user insight: a case study illustrating the card sort technique. *College & Research Libraries*. 61, 4, 349-57.
- Forray, D. (2004). *The Economics of Knowledge*, the MIT Press.
- French, T., Liu, K., Springett, M. A. (2007). Card-sorting Probe for E-Banking in *Proceedings of British Human Computer Interaction*. Vol 1, BCS Publications, ISBN 1-902505-94-8.
- Gefen, D., Pavlou, P.A., Benbasat, I., McKnight, H., Stewart, K., and Straub, D.W. (2005). "ICIS Panel Summary: Should Institutional Trust Matter in Information Systems Research?" *Communications of the Association for Information Systems* (17), pp. 205-222.
- H. Liao, R. W. Proctor and G. Salvendy. (2006). Content preparation for cross-cultural e-commerce: a review and a model, *Behavior and Information Technology*, In Press
- K. Chopra and W. A. Wallace. (2003). Trust in electronic environments in *36th Annual Hawaii International Conference on System Sciences*, pp. 331-340.
- Kelly, G. A. (1955). *The psychology of personal constructs* (vols. 1 and 2). N.Y.: Norton.
- Kim, J. and Moon, J.Y. (1998). Designing towards emotional usability in customer interfaces — trustworthiness of cyber-banking system interfaces. *Interacting with Computers*, vol 10, pp. 1-29.
- Kräuter-Grabner, S., Kaluscha, A. E. (2003). Empirical research in on-line trust: a review and critical assessment. *International Journal of Human-Computer Studies*. 58(6): 783-812
- Kräuter-Grabner, S. Kaluscha, Ewald A. and F. Marliese. (2006). Perspectives of Online Trust and Similar Constructs – A Conceptual Clarification in *Proceedings of The Eighth International Conference on Electronic Commerce*, ACM, p. 235-243.
- McKnight, D.H., L.L. Cummings, and N.L. Chervany. (1998). Initial Trust Formation in New Organizational Relationships. *Academy of Management Review*, 23(3): pp. 473-490.26.
- Nielsen, J. (1999). Card Sorting: How Many Users to Test? Jacob Nielsen's Alertbox, <http://www.useit.com/alertbox/20040719.html>
- Easwar A. Nyshadyam, Monica Ugbaja. (2006). A Study of E-Commerce Risk Perceptions among B2C Consumers. A Two Country Study, in the *19th BLED eConference, eValues*.
- Pavlou, P.A. and Gefen, D. (2004) "Building Effective Online Marketplaces with Institution-Based Trust," *Information Systems Research* (15:1), pp. 37-59.
- Ratnasingham, P. and Pavlou, P.A. (2004) "Technology Trust in B2B Electronic Commerce: Conceptual Foundations," in *Business Strategies for Information Technology Management*, pp 200-215, edited by K. Kangas (Ed.), Idea Group Publishing, Hershey, PA, USA.
- Riegelsberger, J., Sasse M.A and McCarthy, J.D: The mechanics of trust: A framework for research and design. (2005). *International Journal of Human-Computer Studies*. 62(3): 381-422.
- Scott, W. Richard. (2004). "Institutional theory" in *Encyclopedia of Social Theory*, George Ritzer, ed. Thousand Oaks, CA: Sage.
- Stamper, R.K. (1995). "Signs, Information, Norms and Systems, Part 1", in Holmqvist, B., Peber B., Andersen, (eds.), *The Semiotics of the Workplace*, De Gruyter, Berlin.
- Tan, Y., and Thoen, W. (2000). Towards a generic model of trust for e-commerce. *International Journal of Electronic Commerce*, 61-74.
- Wang, Y. D. & Emurian, H. H. (2005). An overview of online trust: Concepts, elements, and implications. *Computers in Human Behavior*, 21(1), 105-125.
- Zucker, L. (1986). Production of Trust: Institutional Sources of Economic Structure, 1840-1920. *Research in Organization Behavior*, 8(1): pp. 53-111