

“Online Legitimacy”: Defining Institutional Symbolisms for the Design of Information Artifact in the Web Mediated Information Environment (W-MIE)

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Abstract. The global nature of the Internet raises questions about variety of ways, whether and how trust is established that guide people’s behavior and beliefs. This study explores on the understanding of trust from the non technical perspectives in the context of web mediated information environment (W-MIE); conceptualized within the notion of online legitimacy [1]. We take up the problem of how to enhance the trustworthiness of information on the web through the design deployment that can be rationalized and understood by the ordinary users. The paper highlights four dimensions of design elements that make up the Institutional Trust Inducing Features framework [2] which warrants increased attention. This paper is merely situating our comments in designing information artifact within a sensitive context that is culturally imbued beyond the typical security scope but rather the conceptual understanding on how user’s engage with information interactions.

Keywords: information artifact, culturally sensitive design, online legitimacy, web mediated information environment (W-MIE), institutional symbolisms.

1 Introduction

As the Internet becomes more pervasive in our everyday lives, our social and economic aspects now are governed by the ‘virtual’ world where interaction are mediated or executed with technology. Its emergence has become the critical part of the overall infrastructure of a society, affecting the social, community, cultural and political life. However, these interactions via the web involved different types and level of risks that are either caused by the uncertainty of using open technological infrastructure for the electronic exchange or can be explained by the conduct of users who are involved in the exchange activities [3]. This is due to the fact that in an online environment the degree of uncertainty of economic transaction is higher than in traditional settings. Today, however, consumer’s interaction is not only involved within the interpersonal or inter-organizational transaction within the electronic exchange model (e.g. e-commerce) but also in the knowledge transaction and exchange within the information exchange mode [4] (e.g. providing services in terms of online advices, information, discussion on topics like career, relationship,

matrimonial, health, financial, legal, politics and religion sermons). These are some of the evidences that the user nowadays are extending their web uses to access information about matters that affect their lives, also to establish personal and organizational connections. Nevertheless, issues like fraudulent behavior, forgery and pretense, questions concerning the original and the copy [5], the evaluation of goods that are the object of commercial transactions have given rise to new problems in the electronic mediated environment. What is at stake here is the entire range of mechanisms that will facilitate interpersonal and inter-organizational transactions, given the new conditions for knowledge transactions and exchanges: increasing specialization, increasing asymmetrical distribution of information and assessment capabilities, greater anonymity among interculotors and more opportunities for forgery identity [4]. As more and more security breaches occurred due to malicious or innocent attacks, the public opinion on security and trustworthiness of using the Internet for online activities has been towards an attitude of distrust. Hence, the value of trust for a robust online world is obvious. It reduces the complexity of a chaotic situation [6]. In the HCI literature, much of the initial research on consumer's judgment of trust on information is conceptualized through its credibility perceptions [7] or quality indicators [8]. However some of the works are heavily criticized because the operationalization of trust was not understandable [9]. However, empirical research in this area is beset by conflicting conceptualizations of the trust constructs, inadequate understanding of the relationship between trust and its antecedents and consequents and the frequent use of trust scales that are neither theoretically derived nor rigorously validated [9].

1.1 Trust within the W-MIE

The notion of trust in information conforms to the interpersonal model of trust whereby it is a social attitude of the trustor towards a technological artifact (the trustee), in this case the electronic information or document such as web page or electronic article [10]. A person may browse or retrieve information for several reasons, e.g. as an evidentiary support for a decision making process, as reference material or facts to supplement one's knowledge. However, limitations can be seen through the questionable quality of the information provided and the risk of getting false information [8]. Less critical and uninformed people are more likely to accept an untruth as a truth [8]. Falsity on the web is seldom revealed because there is too much information. The more information is put on the Internet, the chance of discovering misinformation increases. In addition, most people neither have the time to verify its accuracy nor go back to the same site because the browser may fail to find it again e.g. broken links [11]. Hence, deliberate users trusting decision to use their own knowledge to evaluate the information in its own terms. It is noted, trust exercises on consumer behavior and decision making processes [6]. The Internet spans the globe in all languages and culture. Users and organizations communicate their business ideas, knowledge and information across vast distances. When people are engaged in the knowledge and information exchanges in the virtual world, it is critical to avoid misunderstanding and misinterpretations. Users must comprehend accurately the meaning of what is said. How things are said is as important as what actually is said. This is inhibited by differences in value systems, attitude, beliefs, and

communication styles. Such differences shall be taken into account in order to ensure that the design of an interface are usable and acceptable as the cultural background of users which in turn affects how they operate and interact with an interface. The communication style one uses for generating ideas, exchanging opinions, sharing knowledge and expressing ideas is indeed cultural centric [12]. However, these key issues rooted in deep cultural identities represented via the interface element within information context have not been fully explored and understood empirically. Some researchers have done work in the area of culture and design [13] but results have been either inconclusive or unrelated to develop an IS for information settings in sensitive context. Moreover there is no consensus as to how the trust constructs should be operationalized.

Clearly new methods need to be devised to “certify” the knowledge circulating on the Internet within a context where inputs are no longer subject to control [4]. Another big issue concerns regulation and social behavior and the formation of cooperation based upon trust and shared ethos/ identity in virtual context [14]. This is because, trust and culture are interconnected. The meaning, antecedents, and effects of trust are indeed determined by one’s culture [14]. Indeed, there is a longstanding interest in designing information and computational systems that support enduring human values within sensitive context of design [15]. The need of a deeper understanding for design can be obtained by taking an information perspective on design activities. Under this perspective the major unit of analysis is the information transaction or known as design informatics – the specific needs and tasks associated with capturing, storing, updating, linking and accessing information by describing them with a technologically-neutral vocabulary. This approach offers a strategy for developing a more unified view of design which in turn can provide insight into the requirements of design information systems and elucidate new areas of design competency and opportunity. By analyzing information needs of design and how design teams create capacities to satisfy these needs, we may begin to recognize the invariant, technologically-neutral requirements that emerge from any design methodology. Our goal here is to position our arguments from a non-technical point of view of designing an information artifact which is culturally sensitive in context and design requirements – a theoretically driven approach.

2 Conceptualization of Online Trust in W-MIE

In the IS community and the wider human computer interaction (HCI) aspects, trust has been discussed widely in the context of e-tailing environment (e.g. e-commerce) varies in its models, dimensions and constructs [3]. The problems of trust often conceptualized rather loosely to technical security [3, 10] and technologies mechanisms of understanding such as encryption, communication protocols, cryptography and trusted information architectures [16]. It focuses on the tangible trust or hard trust dimensions comprising formal mathematical and cognitive models of trust. The emphasis is placed on the role of trust for e-commerce adoption and the short term transactional values. Nevertheless, we are not interested in addressing neither trust nor trustworthiness as security or through security but are guided by conceptions of trust developed in the theoretical and empirical work of social scientists and philosophers.

We contend that online trust will not be achieved through security because that vision is founded on a misconstrued notion of trust, missing the point on why we care about trust and making mistaken assumptions about human nature along the way. This separates the view of trust from the conceptual and technical scope because the technological realm of which we speak is so extensive and intricate, and the conceptual domain of trust so broad and varied hence we must not make some qualifications and simplifying assumptions. In addition, the technical point of view on trust derives from the worry about the dependability of these systems, their resilience to various forms of failure and attack and their capacity to protect the integrity of online interactions and transactions. These cases are sufficiently distinct from the W-MIE context that they deserve separate treatment in terms of its setting and veiling properties that affect the formation, readiness or inclination to trust. Hence we cannot rely on traditional mechanisms for articulating and supporting trust in W-MIE as we lack the explicit framework of assurance that support them. We argued that the “logical” model or factor is not sufficient to model of how natural actors behave. Although some of these measures are surely useful and needed, we believed that the idea of total control and a purely technical solution to protect against deception and to favor non-self interested cooperation is unrealistic. Undeniably, the fact that to understand rational actors (human beings) one must take both affect (emotion, values or socialization) and cognitive views into consideration. Hence, researchers need to identify specific user requirements, identify risk problems and thereby the appropriate trust building strategies especially within a cultural setting.

Hence this paper put forward the notion of trust from a non-functional perspective as an emotional, “intangible” response to computer based stimuli [17] or known as the “non technical mechanism” of trust perspectives or “soft trust dimension” [3] to answer in what ways of visualizing trust would be acceptable and understandable for the users. How can we map the user’s expressions of trust with existing security technology or should we create a new set of security technologies from scratch that would better take into account the novel uses and novel users? We believed requirements elicitation in sensitive settings demand us to draw a line between the perception of the designers, who often seen to construct solutions and thereby design for people essentially like themselves but not the perception and the understanding of “the other” which includes the novice and non novice users whose views are excluded from design. Hence the emphasis should be on ensuring the design for *user sovereignty* where it can be signaled, rationalized and understood as part of the overall interface design strategy of information systems for the laymen rather the design for user friendliness. As more people go online for seeking information regardless of context it becomes increasingly important to identify what makes people choose to trust some sites and reject others. In this sense, while not disregarding the importance of online security and the evolving systems that support it, we believe that security has little to do with general consumer trust. This leads to the assumptions that current trust research in IS are hampered by designing for computers rather than humans. Hence we posited that designing trust metrics requires an understanding of not only the technical nuances of security but also the human subtleties of trust perception. The aim of this research is to study trust more closely at end user level, what is trust from the user point of view, what kind of processes of trust decision making based on the interaction with the website and how the words and images are

encountered and perceived. What is needed here is to find a way for computers to understand what “human trust” is made of and gives way to our initial assumptions on how to design an information artifact that is perceived trustworthy. It looks into on how human reasoning trust online triggered by the perceived trustworthy elements of an interface apparent to the users. It is necessary to have a more cognitive and affective view on trust as a complex mental structure of beliefs and goals, which would imply that the trustor has a “*theory of mind*” of the trustee possibly including personality, shared values, morality, goodwill etc. In addition we further emphasis on how people perceived trustworthy information by approaching the information mediated exchange activities bringing with them previous experiences of online trust activities and apply it to the new computer mediated situations rather than being *tabulae rasae* onto which the design for information based systems can write their preferred responses. We argue the facts that trust are not only reduced to rational decisions, but trust is also socially embedded by the institutions, norms, culture and etc. The focus of this paper is to reveal in greater depth on the understanding of trust within W-MIE that takes into account of trust determinants from the perspective of human actor’s reasoning in the context where the sense of a community with common norms and values are significant. A website is merely an extension of human interaction and therefore there is a need in the ability to transfer human trust reasoning mechanisms into the design of a web interface.

2.1 Online Legitimacy – Institutional Symbolisms and Its Dimensions

Based on the above considerations, we offer the following suggestions for the design to enhance the trustworthiness of information artifact. Our work links the social science theories of trust and semiotic principles to form the basis of the Institutional Symbolisms Trust Inducing Features framework as explained in our previous works [1, 2]. The perspective of the framework is a descriptive one, since it categorizes the trust dimensions that act as communication embedded in cultural influence features to support the emergence of trustworthy behavior. In the literature, institutional trust is a type of trust that is also known as system trust [10], reputed credibility [7], and is similar to the transference process described in [10] and control trust [18]. Lewicki et al. [19] describe institutional based trust as the trust that develops when individuals generalize their personal trust to a large organizations made up of individuals with whom they have low familiarity, low inter-dependence and low continuity of interaction. For example, we trust the government system to ensure the stability of a state or we place our trust in a juridical system to uphold the law enforcement and sanctions.

We conceptualized institutional based trust as a form of symbolism, the system of representations and symbols through institutional trust inducing features on the web which we define as *institutional symbolism*. The term institutional symbolism refers to a visible, physical manifestation of the institutional characteristics, behavior and values. Institutional symbolism is the *trust marks*, signs that depicting and presenting connoted message of some *assurance*. On the basis of these expectations, we content that the trust marks represent the beliefs (values) and expectancies held by individual about the overall impersonal structures and situations construed as to network both cognitive and affective trust warranting properties. These beliefs implying that the

institutional symbolisms carry its own disposition and attribution meaning, an institutional manifestation through textually or graphically presentation on the web site. We contend, trust on this institutional symbolism act as a form of social trust where trust initiated from the social mechanism, behavior and values through the means of institutional symbolism representation. These elements represented what constituted “*online legitimacy*”.

a) We proposed the need for content credibility which often referred to believability [7], trustworthiness [3, 6, 9, 10], reliability [10] e.g. links, navigation whereby the ease of navigation was frequently mentioned as a key to promote online trust and sources of content. It gives an emphasis on the information dissemination is free from alteration, biasness or falsification which are ways to reassure the users about the quality of the information and its comprehensiveness [8,11] in terms of accuracy and currency. The information provider needs to explain and summarize its general information gathering practices over the web, perhaps what the information is used for and with whom the information may be shared. It should also consider the necessity of legislation to create civil remedies for users in the event of untrustworthy interactions with the information provider. These evoke the need of elements of truth and validity, lawful and evidential when it involves certain ethics or principles associate with one’s beliefs such as in a religious context; appearance and functionality to ensure the reliability of the content presented and written. It defines the overall organization and accessibility of displayed information on the website. It is said users are more confident using a clear design and format of interface elements of website because it reduces the perceived risks, wasting time, deception and frustration [20]. Example, a content that highlights on a legal matter should derived from someone expert within the subject matter, an authority or affiliation appointed by the organizations, institutions or government. In addition, one’s believability can also evolves out of their past experience and prior interaction with the information provider as trust emerged as the relationship matures [19]. For example, the testimonials and user’s feedback placed special regards to this developing, building and declining of trust in order to identify the reliability (e.g. on site performance) and believability (e.g. deliverables) of the information provider.

b) Emotional assurance or known as benevolence [3, 6, 9, 10] is an important trust element as it depicts the degree to which the information provider (trustee) is believed want to do good to the users. In the aspect of information dissemination it considers the essence of good intention portrayed by the organization/ institution in adherence to their code of conduct. Positive intentions should leads to the overall public benefits without taking advantage by other means, misleading intention or creating confusion. Example, by disclosing ownership of the information up front, it hopes to inform the users about the nature of the relationship of the organization and its affiliations and thus prevent misconceptions or perceived inherent biases.

c) Trustworthy content can also be signaled by the symbols of trusted third party (TTP)/ seals of approval which is usually seen in any online transaction websites. Well known TTP such as TRUSTe seal was perceived by users as a stamp of approval for the quality of a web site’s privacy policy and security [21, 22]. These TTP should effectively capture the process involved in demonstrating user’s satisfaction, guarantees and safety nets and information practices. For example the need for assurance that the information collected or distributed is being handled as outlined in the privacy guidelines and disclosure policies. In addition, the TTP will act as a

guarantee that the information or data transferred is well protected and secured and some kind of a stamp in validating or certifying the truth presented in the content displayed on the web.

d) We also believe that to design trustworthy information artifact should reflect or create the essence of brand and reputation of the information provider. This is because when a person perceives the brand name or symbol associate to it; 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. It is noted that brand image bears great potentialities to strengthen trust [23, 24]. The design can take into account from the creation of the domain name, trademarks or logo which in turn highlights on the trustee ethical values, expertise (authority, knowledge) and familiarity (general business sense).

3 Discussions and Future Directions

We conclude our working suggestions with a key point that designing trustworthy information artifact does not stand apart from other enduring human values, expressions and perceptions especially within the sensitive context of application. In our eagerness to create the tools and conditions to support online legitimacy within the creation of information artifact on the web, we should not depict trust in its narrower sense. We should not address the problem of trust in its mathematical, technical or logical sense where the truth, say of a sentence in a formal language can be formally examined on a meta-linguistics level. Often people feel threatened by these technological processes simply because they are not necessarily ideally devised and constructed to serve people especially the laymen and often tend to dominate people by their complexity. We are interested of the nature of understanding online trust within W-MIE in the sense of its correspondence to reality or at least its pragmatic utility in predicting real events or in solving practical problems by utilizing the right technology facilities. We are also aware that this question can be and have been very diversely interpreted in philosophy resulted in the conclusion that trust has social value and is the basis of sound social interaction, is even an elementary requirement of evolution of social cooperation in the virtual world. It should be noted, not all users are technically well versed. Technology should be the servant, not the master of people and many technology producers put their technology into dominant position; hence force its users to behave as they think she or he should behave. Therefore we stressed again, every new technology imposed should respect the principle of again the user sovereignty not only of user friendliness. Hence, in our previous works [1, 2] and in this paper, we introduce the basis of the discussion by evaluating the relative complexity of processing visual and textual information as part of the trustworthiness processes in imposing and sanctioning behavior online. We proceed then to the evolutionary rational and irrational trust in relation to the psychology definition of trustworthy information. And in the future discussion on the validation of these design definitions and how the consequences enable us to understand the design deployment of an information artifact, its constitutive parts and the epistemological aspects will take place. This will eventually provide us clearer design guidance for suitable technologies that support trust and effective security and privacy protecting behaviors within the culturally sensitive design in W-MIE.

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