User Acceptance Enablers according to the types of identity on Virtual Community

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Abstract

Despite the fact that virtual communities on the Internet have been growing at an exponential rate in recent years, little research has been done on the characteristics of virtual communities. In order to better understand and manage the activities of virtual communities, a theoretical model is proposed in this paper. The objective of this paper is to clarify the factors as they are related to the Technology Acceptance Model. In particular the relationship among identities, trust, and other factors are hypothesized. Using the Technology Acceptance Model, this research showed that the importance of identity and trust in virtual communities. The members of virtual communities interact continuously and share an identity. According to the identity type, different ways of stimulating the members are necessary in order to facilitate participation in activities of virtual communities. The virtual communities of a more utilitarian identity are more sensitive to trust in members than trust in the service provider, and members of a more utilitarian identity are inclined to exchange information with each other.

1. Introduction

The Internet has been growing at an exponential rate in recent years. For many years computer users have used the Internet to share data, collaborate on their work, and exchange messages. Recently, millions of computer users worldwide have begun to explore the Internet and engage in commercial online activities [1].[2] A variety of people have joined one or more of the virtual communities that have grown up to serve consumer needs for communication, information, and entertainment. The rapid growth of virtual communities on the Internet and the accompanying rush in interest by researchers raises the question of what encourages members of a community to interact and make virtual communities more dynamic [3].

The Internet enables millions of people worldwide to exchange information and conduct business. Keeney [4] suggested that Internet Commerce is a function of the customer's perception of the benefits and costs of both a product and the processes of finding, ordering, and receiving it. Measured by this momentum, it is clear that virtual communities will gain greater importance in the future[1]. Hagel and Amstrong [2] argue that "the notion of community has been at the heart of Internet since its inception." Also, they argue that the traditional business functions which were used in direct contact with customers such as marketing and sales will be significantly transformed into the community environment. In a turbulent Internet commerce environment, Internet companies need to understand how to satisfy customers to sustain their growth and market share. This is because customer satisfaction is critical for establishing long-term client relationships [5]. The Internet companies can maintain customer relationships by virtual communities and find out the crucial factors for customer satisfaction by getting information such as preference and interest of clients from virtual communities. It is possible to keep in touch with people who live far away. In the various industries the Web is becoming our collective agora as more and more people are going for virtual communities to seek information and tips, to make transactions, to promote relationships with people far away, to forage for interest and simply to have fun for entertainment purposes. At the same time, many companies are beginning to realize the importance of utilizing the power of virtual communities in order to establish relationship marketing.

Virtual communities offer both special opportunities and challenges. On the one hand such a community destroys boundaries created by time and distance and makes it dramatically easier for people to obtain information, maintain connections, and reinforce relationships. On the other hand, the successful operation of virtual communities depends largely on whether these companies have a comprehensive understanding of the essence of these virtual communities and how much they know their members in terms of who and what their fundamental needs are in the context of virtual communities[1]. A basic understanding of the essence of a virtual community is a prerequisite for any organization operating a virtual community to be clear about the mission, purpose, and the right direction to take to achieve their goal. Understanding members and their needs is also essential in virtual community development since members are the pulse of any community and without them there is no community [6].

Virtual communities are typically powerful, that is, they arise as a natural consequence of people coming together to discuss a common hobby, medical affliction, personal experience, or even develop relationships. The members of communities are typically strangers to one another. Additionally, the nature of online interaction, without the cues that face-to-face contact affords, may require trust for successful communication, or, on the other hand, may inhibit the development of trust [3].

Moreover, though there is extensive research on virtual communities, this research appears fragmented given the importance of the understanding of members' needs in virtual community development. This study seeks to examine the emergence of trust in this environment, the factors that lead to its development and its importance to utilize virtual communities. Also, the purpose of this study is to identify the relationship between identities and other factors. Thus, I study the theoretical foundation for the concept of a virtual community and provide clarifications of core characteristics of virtual communities by using some research models.

2. Theoretical Background

2.1. Virtual Community

Sproull and Faraj [7] say that the Internet is a medium where people access not only information, but also other people in order to chat, discuss, argue and confide. On the one hand, some people want to be united by shared interests, common goals, activities, and enjoy their life by cooperating to share resources and satisfy each other's pleasure. On the other hand, some people come to get information from and give information to other people.

Virtual Communities can be defined as groups of people with common interests and practices that communicate for some duration in an organized way over the Internet through a common location or mechanism [3]. Also, a virtual community can be defined as a group of people who communicate with each other via electronic media, such as the Internet, that share common interests, yet their geographical location, physical interaction or ethnic origin do not impose any constraints for the formation of the community [8, 9]. People have different understandings of a virtual community, depending on their specific needs and the context in which they visit a virtual community. Although the term virtual community is not difficult to understand, it is obscure to define. Some definitions include enjoyment and pleasure, while others strongly associate virtual community with information exchange.

Researchers in this field have been trying to epitomize the essence of virtual community and define it in a way that is acceptable to the various viewpoints of most researchers, if not all of them. Among them the most often cited definition of a virtual community was first given by Rheingold [10] as: "social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feelings, to form Webs of personal relationships in cyberspace. A virtual community is a group of people who may or may not meet one another face to face, and who exchange words and ideas through the mediation of computer bulletin boards and networks."

There are some differences between virtual communities and face-to-face communities. First, physical location is irrelevant to participation in virtual communities. Second, most participants in virtual communities are relatively invisible (i.e. if an individual only reads messages and does not post, other members may not aware of his/her presence at all). Third, logistical and social costs to participate in virtual communities are lower [7]. Tönnies [11] was one of the first to study communities. Tönnies [11] distinguished three different kinds of communities. The first one is the community by kinship. The second one is the community of locality. The third one is the community of mind. The community of mind "implies only co-operation and coordinated action for a common goal." A virtual community is similar to a community of mind described by Tönnies [11], except that it forms through an electronic communication medium and is not bound by space and time. Compared to a community offline, virtual communities tend to be larger, more scattered in space and time, more densely knit, and to have members with more heterogeneous social characteristics, such as lifecycle stage, gender, ethnicity, and socioeconomic status, but with more homogeneous attitudes [12]. Virtual communities have some core attributes which include: first, members have a shared goal, interest, need, or activity that provides the primary reason for belonging to the community; second, members engage in repeated, active participation, and often, intense interactions, strong emotional ties, and shared activities occur among participants; third, members have access to shared resources, and policies determine the access to those resources; fourth, there is reciprocity of information, support, and services among members; and fifth, there is shared context of social conventions, languages, and protocols [6].

For an Internet Commerce Company, the important issue is what draws people to and makes people stay on a Web site, so that they purchase goods or use services. For example, the success of America Online (AOL) proves that chatting online to friends, family, and new acquaintances is a promising business. Internet commerce entrepreneurs expect that virtual communities not only will make people stay on their sites, but will also have an important role in marketing, as people tell each other about their purchases and discuss banner ads, and help

and advice each other [6]. However, there is still much discussion about the practical and commercial perspective of virtual communities.

As mentioned before when discussing the differences between virtual communities and physical communities, face-to face group interaction is fundamentally different from written communication in that it allows an exchange of a variety of verbal and non-verbal information [13, 14]. Sometimes, non-verbal communication carries more meaningful information than written communication. More specifically, the abundant meaning found in voice and face-to-face communication that is carried by change in the voice, gestures, dress, posture, and other indicators is missing in virtual communities, so that the medium remains open to multiple interpretations [15]. The difference between virtual communities and physical community currently provides a subject for researchers. Especially, nowadays the number of virtual communities continues to grow as the Internet technology is improving and more people get access and become familiar with the technology [16]. It is becoming important to figure out the mechanism of virtual communities and use it for marketing perspectives according to the growth of virtual communities.

2.2. Identity Theory

Organizational identification has long been recognized as a critical construct in the literature on organizational behavior, affecting both the satisfaction of the individual and the effectiveness of the organization [17, 18, 19, 20, 21]. Social identity theory (SIT) can restore some coherence to organizational identification, and it can suggest fruitful applications for organizational behavior. SIT offers a social-psychological perspective, developed principally by Henri Tajfel [22, 23, 24] and John Turner [25, 26, 27, 28]. According to SIT, people tend to classify themselves and others into various social categories, such as organizational membership, religious affiliation, gender, and age cohort [24]. As these examples suggest, people may be classified in various categories, and different individuals may utilize different categorization schemas. Categories are defined by prototypical characteristics abstracted from the members [28].

Social identification, therefore, is the perception of oneness with or belongingness to some human aggregate. For example, a woman may define herself in terms of the group(s) with which she classifies herself (I am a Canadian; I am a woman). She perceives herself as an actual or symbolic member of the group(s), and she perceives the fate of the group(s) as her own. As such, social identification provides a partial answer to the question, Who am I? [29, 25]

The individual's organization may provide one answer to the question, who am I? Hence, we argue that organizational identification is a specific form of social identification. This search for identity calls to mind a family of existential motives often alluded to in the literature on organizational behavior, including searches for meaning, connectedness, empowerment, and immortality [30, 31, 32].

The individual's social identity may be derived not only from the organization, but also from his or her work group, department, union, lunch group, age cohort, fast-track group, and so on. Albert and Whetten [33] distinguished between holographic organizations in which individuals across subunits share a common identity (or identities) and ideographic organizations in which individuals display subunit-specific identities.

Organizational identity is a key intangible aspect of any institution. It affects not only how an organization defines itself, but also how strategic issues and problems, including the definition of firm capabilities and resources, are defined and resolved [34, 35, 36].

Identity is essentially the set of beliefs or meanings that answer the question, "Who am I?" [37], or in the case of an organization, "Who are we?" Since Albert and Whetten's [33] seminal paper, a steadily growing volume of research has demonstrated the utility of the identity construct, employing it in a variety of ways to explore and explain a range of organizational phenomena.

Furthermore, organizational identity has been combined with social identity theory to shed light on the process whereby individuals identify with organizations [38].

Organizational identity represents how members answer the question "what kind of organization is this?" [33, 39]. Identity refers to "how the institution sees itself" [34]. For example, when members perceive their organization's character to be oriented mainly toward economic issues, identity is deemed more "utilitarian"; when they perceive the organization's character to be defined mainly by ideological and value-based concerns, identity is deemed more "normative" [33]. Utilitarian identities are governed by values of economic rationality, the maximization of profit, and the minimization of cost, which means the reciprocity of information, support, and services among members. Members want to engage in sharing information with them in order to solve problems. Normative identities are oriented toward values and ideology.

At the individual level, the sense of belonging that is predicted on trust is no longer dependent on any particular organizational identity belief. Rather, the trust derives from a belief that different identities remain consistent with and are true to a fundamental core ideology. Identities build trust through identification with something new and higher than what we do and how [40, 41].

Utilitarian identity builds trust in the virtual community environment. Especially, utilitarian identities are governed by values of economic rationality. Users

consider other member who provides information in virtual community. Thus, utilitarian identity has a positive relationship with trust in members of the virtual community.

2.3. Trust

Social psychology characterizes trust in terms of expectations and willingness to engage in a transaction, the risks associated with acting on such expectations, and the contextual factors that either enhance or inhibit the development and maintenance of positive expectations [42]. Gulati [43] conceived of trust as a type of expectation that alleviates the fear that one's exchange partner will act opportunistically. In Hart and Saunders's [44] study, trust refers to confidence that the behavior of another will conform to one's expectations, and in the goodwill of another. Macintosh and Lockshin [45] defined trust as one party's confidence in an exchange partner's reliability and integrity. Ratnasingham [46, 47] defined trust as the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the truster, irrespective of the ability to monitor or control that other party. On Gefen's [48] definition, trust is the confidence a person has in his/her favorable expectations of what other people will do, based on previous interactions. Grazioli and Jarvenpaa [49] defined trust as the expectation that the promise of another can be relied upon and that, in unforeseen circumstances, the other will act in the spirit of goodwill and in a benign fashion toward the truster.

Although there are various definitions of trust, they have some characteristics in common. First, trust is one party's confident belief in another party's particular action [48, 50]. This party is called the trustee, and that one is the truster. Second, trust is the expectation that the trustee's promise can be relied upon and that the trustee will act in the spirit of goodwill. Third, trust is based on previous interactions. Although the trustee's previous behavior cannot guarantee that he/she will act as expected, the truster's trust will increase if the trustee has behaved previously as expected. Finally, trust is not related to whether the truster is able to monitor or control the trustee.

Trusting beliefs and intentions came primarily from social psychology, which says that interactions between people and cognitive-emotional reactions to such interactions determine behavior.

Trust is important in virtual communities where the absence of workable rules makes a reliance on the socially acceptable behavior of others, i.e. trust, essential for the continuity of the community [3]. Virtual communities are similar to organizational communities which allow for social interaction among members using various Internet tools and exhibit certain community standards and rules

through trust. Trust is important in virtual communities because, as research has shown, people in communities work better with others they trust, while actively avoiding contact with those they do not trust [51]. Trust in virtual communities can be understood in the context of interpersonal relationships, i.e. trust between people [52]. In a virtual community environment, people interact with each other by public communication tools. In the virtual community one converses with one or two other individuals, and because one is typically posting to a general audience, trust is at the generalized, collective level [3]. Notions of interpersonal trust have been applied to collective entities such as groups [53]. Repeated interaction with others and the open public reply and debate of a message may also help trust evolve [3].

There is the three dimension of trust: ability, benevolence, and integrity. Ability refers to skills or competencies that enable an individual to have influence in a certain area. Benevolence is the expectation that others will have a positive orientation or a desire to do good to the trustee. Integrity is the expectation that another will act in accordance with socially accepted standards of honesty or a set of principles that the trustor accepts, such as not telling a lie and providing reasonably verified information [3].

Among the virtual community's members, two dimensions seem to be important: ability, on the one hand, and a combined benevolence and integrity dimension, on the other [3]. The accuracy, soundness, and reliability of information, which is embodied by trust in abilities, are crucial. The other two dimensions, benevolence and integrity, both lead to the reciprocity in the communities' conversation.

In the virtual community environment, the communities will not survival if reciprocity does not exist. Trust enables and determines the nature of interpersonal relationships [51]. There is an exchange of information among people who trust each other. When trust exists between people, they are more inclined to share their thought with each other and cooperate in shared activity. In the virtual community environment, this shared activity is in the form of cooperative information exchange [3].

There is an obvious relationship between trust and information exchange. If trust among members in virtual community increases, information exchange between members in virtual community also increases. It would be expected that increased trust in members would increase the activity of giving and getting information between members because the value of such information depends on the honesty of the person providing it and their willingness to help. So, it is hypothesized that when participants trust in their members, they will be more inclined to give and get information. In this model, the intended use means the intention to give information to and get information from members in virtual communities.

H1: Trust in members will positively affect intended use.

2.4 Technology Acceptance Model

TAM, introduced by Davis [54], is an adaptation of TRA (Theory of Reasoned Action) model specifically tailored for modeling user acceptance of IS. The goal of TAM is to provide an explanation of the determinants of computer acceptance that is general, capable of explaining user behavior across a broad range of end-user computing technologies and user populations, while at the same time being both parsimonious and theoretically justified [55].

TAM adapted the generic TRA model to the particular domain of user acceptance of IS technology, replacing TRA model's attitudinal determinants with two beliefs: perceived usefulness and perceived ease of use. The TAM was found to be a much simpler, easier to use, and more powerful model of the determinants of user acceptance of IS technology, while both models were found to satisfactorily predict an individual's intentions and actual behavior. In addition, TAM's attitudinal determinants outperformed the TRA model's much larger set of measures [56].

A Web site is, in essence, a type of information technology. As such online usage intentions should be explained in part by the technology acceptance model, TAM. Perceived usefulness is defined as the prospective user's subjective probability that using a specific IS will increase his/her job performance within an organizational context. Perceived ease of use refers to the degree to which the prospective user expects the target IS to be free of effort. Perceived usefulness is a measure of the individual's subjective assessment of the utility offered by the new IT in a specific task-related context. Perceived ease of use is an indicator of the cognitive effort needed to learn and to utilize the new IT [48].

Trust should also increase certain aspects of the perceived usefulness of a Web site. The usefulness of a Web site depends on both the effectiveness of its relevant technological properties and on the extent of the human service behind the IT, which makes the non-technological aspects of the IT effective [57]. The user will be able to successfully complete tasks on the Web site (e.g., search for information) with an information provider who can be trusted. Trust establishes the credibility of the service provider in providing what has been promised [58]. Also, trust builds perceived usefulness by providing the measure of subjective guarantee that the member who provides information can make good on his/her side of the deal. Sharing information with a member who cannot be trusted could result in decreasing usefulness. Like this, if users gain the expected benefits from the information providers (members) through the virtual community, usefulness will

be increased. A trusting relationship is in itself a benefit of the interaction with the virtual community's members.

H2: Trust in members will positively affect perceived usefulness.

As shown in previous research [57, 59], it is hypothesized that paths predicted by TAM apply also to Internet environment. The more useful and easy to a Web site in enabling the users to accomplish their tasks, the more it will be used [57]

H3: Perceived usefulness will positively affect intended use.

H4: Perceived ease of use will positively affect intended use.

H5: Perceived ease of use will positively affect perceived usefulness.

3. Method

A field study technique is employed to examine the effects of identities, trust and TAM on intentions to use from a Web site.

The unit of analysis in this paper is an individual user of a virtual community. The population of interest is the individual with the experiences in virtual community.

The data for this paper was made available via a paper survey of virtual community users. In the test, I gathered some undergraduate students and graduate students. In total, 135 cases were gathered for about one week, but there were some missing values in a sample and there were some inappropriate cases. Thus, I finally analyzed only 37 cases for utilitarian identity model and 58 cases for normative identity model. The normative identity model wasn't analyzed in this paper.

Fifty-eight percent of the respondents were male, and forty-two percent were female. Almost all respondents were in their twenties or thirties. The respondents were engaged in a variety of occupations. About eighty-seven percent of the respondents had experienced a virtual community for over one year while ninety-seven percent of the respondents had experience using the Internet for over one year. Detailed descriptive statistics relating to the respondents' characteristics are shown in tables.

The scientific research method is used to develop reliable and valid measurements for the theoretical constructs of the research model. The measurement items are developed based on related literature. When developing the items, the multi-item method is used and each item is measured based on the seven-point Likert-type and semantic differential scale. when possible, measurement items that have already been used and validated by other researchers were adopted. The questionnaire contained the standard TAM scales of Perceived Usefulness and Perceived Ease of Use adapted from Davis' scales [55]. Intended use of a Web site was assessed by four items. The items used for

perceived usefulness and perceived ease of use were adapted from prior research with appropriate modification to make them specifically relevant to the virtual community environment. Six items each were used to measure perceived usefulness and perceived ease of use. Respondents indicated their agreement or disagreement with the twelve statements using the seven-point Likert-type scale.

The items used for intended use were adapted from prior research with appropriate modification to make them specifically relevant to the virtual community environment. Four items were used to measure the construct. Respondents indicated their agreement or disagreement with four statements using the seven-point Likert-type scale.

Trust (in members) is considered as a belief with two dimensions: ability and benevolence/integrity, which is adopted by a reference [3]. The measurement of the components of trust was adapted from Jarvenpaa et al [53]. Respondents were asked to indicate their agreement or disagreement with twelve statements using the seven-point Likert-type scale.

The notion of trust in a virtual community is trust in the collective entity of others.

Identity items are composed of six items. Identity items are adopted by a reference [33, 34, 60, 61, 62, 63, 64, 65]. Identity items are used to make a distinction between utilitarian identity and normative identity. Respondents were asked to indicate their agreement or disagreement with the six statement using the seven-point Likert-type scale.

4. Analysis and Results

For the initial measurement assessment, I follow the instrument validation process suggested by Struab [66]. Reliability is a partial contributor to validity, but a measurement tool may be reliable without being valid [67]. Therefore, internal consistency is tested first, and then content and construct validity.

Internal consistency reliability is a statement about the stability of individual measurement items across replications from the same source of information [66]. Large Cronbach's alpha coefficients are usually signs that the measures are reliable [66].

Construct validity indicates whether or not the measures chosen are true constructs describing the event [66]. There are many different aspects of construct validity that have been proposed in psychometric literature [68]. In this paper, the Straub's [66] processes of validating instruments in MIS research are applied to test construct validity in terms of convergent validity.

Cronbach's alpha was used for assessing the reliability of the items in each category. The items with Cronbash's

alpha less than 0.7 thresholds are eliminated. Principal component analysis using varimax rotations were used for assessing the construct validity of the items. The alpha values range from 0.7876 (for Identity) to 0.9474 (for Trust). Hair, et al. [69] suggested that the lowest limit for Cronbach's alpha should be 0.70 although Straub [66] suggested 0.80 as the limit. All constructs in the research model demonstrated acceptable reliability because the construct with the lowest alpha coefficient, utilitarian identity, displayed marginally satisfactory reliability.

Convergent validity is the degree to which multiple attempts to measure the same concept are in agreement [70]. The idea is that two or more measures representing the same thing should co-vary highly if they are valid measures of the concept [68].

A convergent validity test was done by specifying a single factor model for each construct. The test shows the factor loadings of the measurement items. TA1 and PE5 do not surpass the recommended level for factor loading, 0.60 [71]. It is decided to eliminate these measurement items, and all the remaining measurement items surpass the recommended level.

The major objective of this section is to empirically test the hypothesized causal structure of the research model. The model was to extend TAM with the trust concept for the virtual community environment from the perspective of identities. By building an extended model of TAM and examining the relationships between trust and the existing variables of TAM, it is aimed to explain a user's intention to use the virtual community by dividing it into two identities: utilitarian identity, normative identity. However in this paper, only the perspective of utilitarian identity is analyzed because the data size is small. Also, in this test, there isn't enough data to use SEM. Thus, data is analyzed by regression analysis. Hypotheses 1 and 2 examined the impact of one user's motivating belief in another: trust on intended use, and trust on perceived usefulness. Trust in members has a significant impact on perceived usefulness ($\beta = 0.401$, $t = 2.665$, $p < 0.01$). Trust in members has a significant impact on intended use ($\beta = 0.367$, $t = 2.578$, $p < 0.01$). The impact of perceived ease of use on perceived usefulness is also significant ($\beta = 0.528$, $t = 2.628$, $p < 0.05$). The impact of perceived ease of use on intended use is significant ($\beta = 0.376$, $t = 2.183$, $p < 0.05$). The impact of perceived usefulness on intended use is significant ($\beta = 0.576$, $t = 2.503$, $p < 0.05$). Therefore, hypotheses 1, 2, 3, 4 and 5 are accepted.

5. Conclusion

The proliferation of the Internet and WWW has carried new business opportunities for organizations through electronic commerce. The growing commercial use of the

Internet, however, introduces a new organization: the virtual community.

This paper proposed a theoretical model, which is based on the literature encompassing the areas of IS, technology acceptance, and organizational behavior. In the model, I investigated the impact of identities on trust and user acceptance under the virtual community environment. The model extended TAM, which is one of the most widely used models for explaining user acceptance of various IS, in the Internet context.

People come to virtual communities to exchange information-either by providing it for others or by soliciting it from others from the perspective of utilitarian identity. This exchange is based upon the trust that members have in each other, and without this trust, there is no exchange and the virtual community will cease to exist. This research shows elements, which build this trust.

In this paper, there are some limitations. First, a sample size is too small, and research is still underway. Thus my next survey will be performed with a bigger sample size. Second, the model should be adjusted and developed based on the robust theory. There is another model for comparison that is not used because of small sample size. The next step is a comparison using both models. Third, other factors that affect a user's acceptance should be considered. The constructs that mediate or affect the model enhance the rigorousness of research.

6. References

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