Building and Managing Social Capital in Virtual Communities

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Abstract

We suggest that the development and sustainability of social capital is related to the social context in which individuals, groups or firms operate. Therefore, we argue that there is a direct relationship between how one party conceives to be benefited from being part of another group or network and its implication for the development of social capital. In this paper, we use a social exchange metaphor for understanding the challenges related to the management of social capital in a virtual community. First, we provide an overview of virtual community and discuss the application of Information and Communication Technology (ICT) for supporting this type of community. Second, we address the management challenges for the development process of social capital from a sociological standpoint. Lastly, we suggest the implications of study for the management of social capital in virtual community. The following research questions guide this study—What is/are the key strategic challenges for the management of social capital in virtual community? How do establish an effective knowledge sharing process for supporting the development of social capital in a virtual community? How can the social exchange metaphor help in managing the strategic challenges related to the formation of social capital in a virtual community?

1. Introduction

Internet is increasingly seen as a useful mode to share data, collaborate on research, and exchange messages for both the organizational and virtual community (VC). A set of rules as a guiding principle for individuals to act or participate is common to both VC and organizational community [29][55]. VC evolved as a result of the implementation of Electronic Information Exchange (EIES) systems for computerized conferencing in 1976 [26]. It is observed for the case of EIES that a collective intelligence capability for decision-making was cultivated through this implementation. However, understanding how individuals interact and exchange information through the use of Internet and its implications on the formation of social capital is limited. Social capital can be essentially viewed as network of contacts of the individuals or participating organizations in an exchange [55]. Therefore, we highlight the need for understanding the mechanics of exchange, coercion and conflict between contacts or network of contacts as a useful paradigm for this social capital formation research in VC.

A study by Turoff [52] and Burnett [9] suggests that the expansion of computer-mediated communication (CMC) provides a platform for individuals to meet, communicate, collaborate, socialize, and shop. Smith [48] highlights that the sense of belonging and concrete experience of social networks (and the relationships of trust and tolerance) can bring great benefits to people. This eventually serves as motivating factors for people participating in a VC. Recent studies on VC also suggests that gaining access to new knowledge of product, process, competitors and markets can also be seen as motivating factors for people participating in VC [1]. Walther [55] further highlights that ICT infrastructure needs to be in place so that the VC can emerge. However, this study also argued that social structure of the networks needs careful examination, which serves as a basis for understanding the utilization of ICT for supporting the VC [55]. We argue here that knowledge sharing or KS is an important part in the formation process of social capital. KS involves a relationship between actors (same as people or individuals) that is embedded in a structure of other social relationships [17][3]. Boer et al. [3] suggests that these ongoing social relationships provide the constraints and opportunities for individuals, organizations and knowledge, and provides a basis for understanding the dynamics of KS in VC. Individuals establish their network of contacts through this sharing. Therefore, KS is seen as essentially a social phenomenon. Social capital is increasingly considered as significant part of other organizational asset such as financial, human, intellectual, and other capitals in today's communities. It is regarded as the social fabric or glue that holds communities and other social networks together [8]. Smith [48] suggests that the process for fostering and sustaining social capital lies in the interaction, which enables people to build communities, to commit themselves to each other, and to knit the social fabric. Prior studies have examined social capital from three perspectives: (i) the density of social networks that people are involve in; (ii) the extent to which they are engaged with others in informal social activities; and (iii) their membership of groups and associations [7][13][48]. Therefore, we suggest that an effective knowledge

sharing or KS is critical to the development and sustainability of social capital in VC. In this paper, we address the process for building social capital through KS in VC. We first define the concept of VC and suggest that this study on VC can essentially follow the patterns of organizational community building research. Second, we present the significance of KS as an activity for fostering the development and sustainability of social capital in VC. Why is the understanding of KS critical for the development and sustainability of social capital in VC? And how can this new form of informal community establish its social network in order to build and sustain the social capital? Understanding this phenomenon from both a theoretical and an applied perspective calls for an examination of the conceptual issues related to the formation of community and in particular VC.

2. Conceptual Issues for Understanding Virtual Communities

We first introduce the concept of *community* before addressing the conceptual issues for VC. Community is associated with a place and a name in his thought [35]. Nelson et al. [35] further added that community is where one goes to shop, to attend a show, to meet friends, or simply to loaf. The common-sense concept of community is that it involves an area, people, and the relationships among people (e.g. structure). The elements of structure in a community consist of groups, formal organizations, institutions, division of labor, values, social differentiation, and functions. Therefore, community may be formally defined as the structuring of elements and dimensions to solve problems that can be solved within the local area [35].

VC is defined as a social entity where a number of people relate to one another by the use of a specific technology [45][24][28][47][49]. In addition, a VC is considered to be a source from which individuals seek social support using computer-supported communications [53][22]. Hiltz and Wellman [20] argued that the difference between communities' off-line and computer-supported communities is that VC is more dispersed in space and time, but more closely knit. It is further suggested that the members of a VC is more heterogeneous in their characteristics and homogeneous in their attitudes [20]. Furthermore, Igbaria [22] suggests that VC 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 networks and bulletin boards. VC is therefore defined as information technology based system which supports the communication and social relationships between people whether individuals or groups of people.

3. Building Social Capital Through Knowledge Sharing

In this section, we discuss three issues related to the development and sustainability of social capital in a VC. We provide an introduction to social capital first. Secondly, we discuss KS in the context of developing and sustaining social capital in VC. Thirdly, we provide a conceptual framework highlighting the process involved in the formation of social capital.

The notion of social capital was first introduced by Lyda Judson Hanifan's discussions of rural school community centers [48]. The term 'social capital' was used to describe tangible substances, which count for most in the daily lives of people. The major concern was on the cultivation of good will, fellowship, sympathy and social intercourse among those that make up a social unit [48]. Most recently, Putnam [41][43] initiated social capital as a focus for research and policy discussion. However, other prominent contributions came from [23] study in relation to urban life and neighborliness. Bourdieu [4] first used the term to refer to the advantages and opportunities accruing to people through membership in certain communities. With regards to social theory, Coleman [10] used the term social capital in his discussions of the social context of education. Social capital is also used to describe resource of individuals, which emerges from their social ties [10]. Coleman [10] argued that social capital differs from the financial capital found in bank accounts and the human capital inside people's heads. It is further suggested that social capital inheres in interpersonal relations and describes the durable networks, which form social resources through individuals, and groups strive for mutual recognition [10]. As such, social capital is the necessary infrastructure of civic and community life that generates 'norms of reciprocity and civic engagement.'

Social capital is seen as a core concept in business, political science, healthcare, and sociology. It can be viewed as a common framework for understanding the depth of a community's social connectedness. Putnam [42] suggests that social capital refers to features of social organization such as networks, norms, and social trust, which facilitates coordination and cooperation for mutual benefit. It can also be referred to as institutions, relationships, and norms that shape the quality and quantity of a society's social interactions [50][51]. Social capital is not just the sum of the institutions, which underpin a society-it is the glue that holds them together [51]. Furthermore, Cohen and Prusak [12] suggests that social capital consists of the stock of active connections among people--the trust, mutual understanding, and shared values and behaviors, which bind the members of human networks and communities and make cooperative action possible. Jacobs [23] defines social capital as neighborhood networks. Networks are not merely the

result of historical accident; they came about as individuals spend time and energy to connect with others.

So, why is the understanding of knowledge sharing (KS) important to the formation of social capital? What is relationship between KS and formation of social capital? How can the effective KS systems help develop and sustain social capital in VC? According to the *theory of organizational knowledge creation*, knowledge is generated through a process of interaction of tacit and explicit knowledge [36][37][27]. Knowledge is either transformed within one single person or among a group of people. Therefore, it is important to note that knowledge is neither given nor pre-defined, but created through a process of individual interpretation and personal construction [44].

Here, we discuss two broad types of knowledge-- explicit and tacit [37]. Explicit knowledge is knowledge that can be expressed in words and numbers, and shared in the form of data, scientific formula, specifications, and manuals [21]. Explicit knowledge is packaged, easily codified, communicable and transferable. An example of explicit knowledge is the manuals, which accompanies the purchase of electrical goods--microwave oven. On the other hand, tacit knowledge is considered to be highly personal, hard to formalized and difficult to communicate or share with others [21]. Subjective insights, intuitions, and hunches fall into this category of knowledge. Tacit knowledge deals with individual's actions and experience, as well as in the ideals, values, or emotions he or she embraces. An example of tacit knowledge is knowledge a chemistry professor may have on carrying out experiments of certain substance.

We suggested earlier that the development and sustainability of social capital for both the organizational and virtual community is essentially a social process. Social capital is developed through the community who shares knowledge about certain products, services, and markets to a group of people interested in common goals. It is therefore through an effective KS which individuals or organizations are able to develop and sustain the social capital in VC.

So, what is the process for building a sustainable social capital for VC? Here, we provide a conceptual framework called "*Process of building social capital*" in the context of virtual community (refer to Figure 1). This framework was adapted from an organizational context, and by integrating the ideas, we attempt to explore and apply it in the context of VC. This framework begins with the first layer of the types of knowledge-- tacit and explicit. We argue that a full understanding of these two types of knowledge will facilitate differentiating how knowledge is exchanged and shared among people in organizations. To illustrate this further, we introduce the KS process developed by [33]. We highlight here that a framework for evaluating and incorporating new experiences and information is thus crucial. This is crucial as knowledge can be viewed as a mix of experience, values, contextual information, and expert insights.

The case of MITRE [33] suggests four perspectives for understanding knowledge flows and collections-- individuals or groups exchange it with each other (e. g. knowledge exchange), record it or capture it (e. g. knowledge capture), reuse the recorded knowledge assets (e. g. knowledge reuse), and finally, generate new knowledge as they internalize learning into the way they think and know (e. g. knowledge internalization).

Giddens [15] suggests that structuration is important as it integrates the concept of knowledge and social relationships. He further argued that the relationship between people is established as soon as they share knowledge with one another [15]. This relationship between people consequently influences the way knowledge is being shared. Knowledge can be shared between people through face-to-face, or through technology either asynchronous or synchronous (which is known as virtual community). In our model (see Figure 1), we explicitly show "people" linked to several nodes indicating the networks based on the establishment of social exchanges of goods and behaviors where they are assumed to have the reciprocal element when they determine the value of knowledge each of them has. The exchange of knowledge is further been moderated by the elements of power, control and benefits by each exchanging party as highlighted in the elementary theory of the social structure [54].
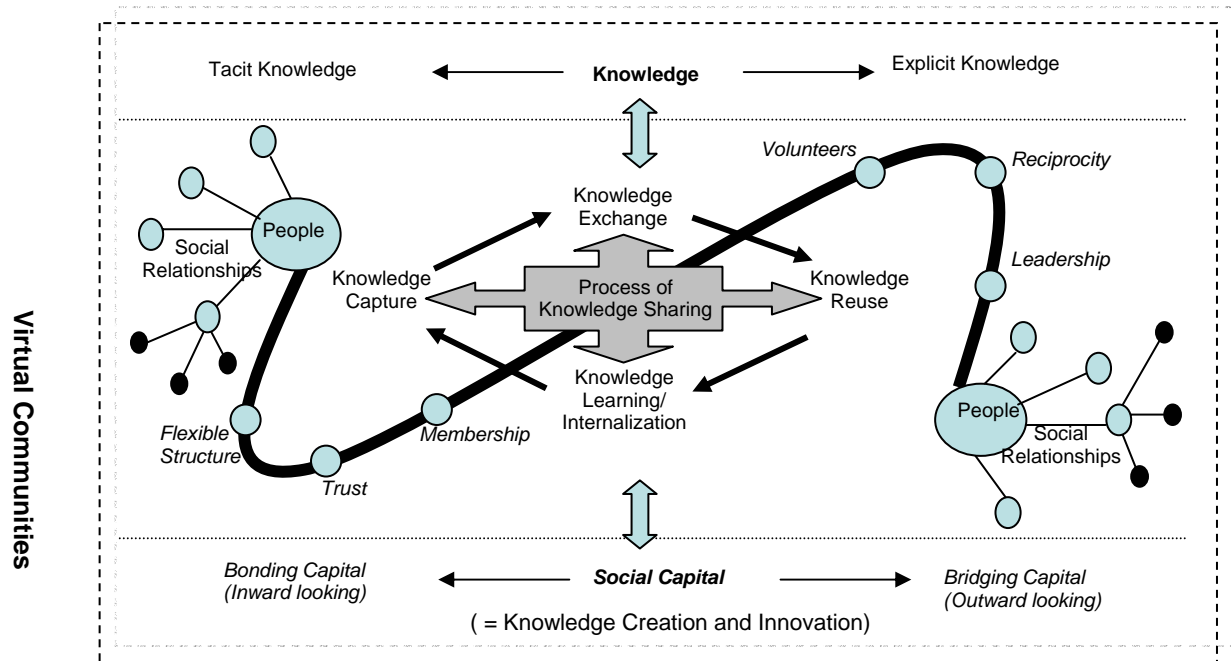
Figure 1. A conceptual framework for building social capital [55]

In Figure 1, there is a dark line with several key nodes representing the 'social capital' variables, which is directly connected to the people with their own social bonds, norms and networks, is presented. We suggest that these antecedents consisting of six key variables in turn will facilitate the final process--the knowledge sharing and creation of social networks and exchanges for building social capital in VC. Subsequently, this outcome–social capital is framed as the last layer of our proposed conceptual framework (see figure 1) where social capital can be seen as having two additional dimensions--bonding (or exclusive) and bridging (or inclusive). The former may be more inward looking and have a tendency to reinforce exclusive identities and homogeneous groups. While the latter may be more outward looking and encompass people across different social divides [43]. Putnam [43] further explains that bonding capital is good for under girding specific reciprocity and mobilizing solidarity while bridging networks, by contrast, are better for linkage to external assets and for information diffusion. Further, bridging social capital can generate broader identities and reciprocity, whereas bonding social capital bolsters our narrower selves [43, p. 22]. In the next section, we discuss the dimensions of social capital.

4. Understanding the Dimensions of social Capital

Nahapiet and Ghoshal [34] divide social capital into three dimensions (different from Putnam's dimensions)--

structure, cognitive and relational in their comprehensive review of the conceptual literature. Structural social capital refers to the ways in which motivated recipients gain access to actors with desired sets of knowledge and intellectual capital. This dimension of social capital is usually studied using a network approach. In the network approach, the frequency of contact and resulting social distance among actors in a particular firm or organizational field are plotted to form a web-like diagram illustrating actor interaction patterns. The objective of this type of research is to determine the central nodes of the network or the critical communicators, which is helpful in understanding communication patterns as well as resultant organizational behaviors such as power positioning and knowledge flows [5][13].

In contrast, cognitive social capital approach recognizes that exchange occurs within a social context, which is both created and sustained through ongoing relationships [34]. Similar to the notion of community of practice [6] and some aspects of virtual community, cognitive social capital refers to the shared meanings which can be created through stories and continual discussions within a specific, often clearly defined group. These shared meanings are self-reinforcing in that participation as the community is dependent upon an a *priori* understanding of the context and continual contribution to the on-going dialogues.

The third dimension of social capital deals with the relational aspects, which is concerned with the underlying

normative dimensions that guide exchange relationship behaviors. Norms exist when the socially defined right to control an action is not held by the individual actor, but instead is held by others [11]. Therefore, norms represent degrees of consensus and hence are powerful although fragile form of social capital [34].

5. Managing the Challenges of Social Capital

There are a few challenges that exist in each of the dimensions mentioned above for virtual communities seeking to create, sustain, and exploit their social capital. As we understand, connections made through face-to-face interactions are necessary for building social capital. Due to the fact that face-to-face interactions are not always practical or possible in virtual communities, we must look for ways to build and leverage social capital virtually [31].

5.1 Structural Challenges

A study by Rocco [46] suggests that the level of trust that exists in virtual workgroups could be measurably improved by even a single face-to-face interaction at the beginning of the project. But barriers of time, distance, and physical setting can make such interactions difficult to accomplish.

Another aspect of this challenge is that when people are across multiple virtual communities, it is difficult for them to make connections with others having a specific expertise. Organizations have attempted to solve the problem by developing an electronic "yellow pages" and dedicated skill directories where individual could provide data regarding their level of expertise on a variety of topics. While some of these efforts proved useful, many of them did not achieve their desired results [31]. This is because these repositories require users to manually update their expertise profiles regularly, which individuals often failed to do so.

5.2 Cognitive Challenges

One of the greatest disappointments encountered in large organizations is the difficulty of ensuring everyone is "reading off the same page." Shared understanding is not guaranteed even when people are physically together, observing and discussing in the same environment [31].

In a virtual world, a number of barriers make it difficult to ensure that each member in a conversation has appropriate contextual clues necessary to develop mutual understanding and share knowledge. First, communicating across time and space often introduces cultural and linguistic differences that can distort the intended meaning. Talking with someone who is less familiar with your language can be difficult in face-to-

face setting; but trying to do so without any facial expressions, and gestures would be even more difficult.

Lesser and Cothrel [31] points out that another barrier facing the development of social capital in a virtual community is the difficulty associated with building a common set of assumptions and understandings. In physical settings, the interaction around common artifacts makes it easier to develop reference points that everyone in a conversation can share.

5.3 Relational Challenges

The last challenge involves relationships in virtual environments. As Lesser and Cothrel [31] states that connections are easy but relationships are hard. The Internet age has given rise to a whole range of questions about how we evaluate the trustworthiness of others that we cannot see, and perhaps have never met. In this regard, [cited in 31,p.73] suggest that "these issues have to do with information quality, bias, endorsement, privacy, and trust – the fundamental values of society, much misunderstood on the web, and also highly susceptible to exploitation by those who can find a way." Furthermore, the public nature of many virtual conversations, such as chatting, can leave individuals exposed to attacks by others, many of them anonymous and not controlled by the norms and responsibilities of traditional social interactions. According to Blanchard and Horan [2], this form of attack known as "flaming," can lower the level of social trust within a virtual environment and can inhibit the participation of individuals seeking more forthright relationships. In the next section, we suggest some implications in building social capital in virtual communities.

6. Implications for Social Capital Building in Virtual Communities

Nahapiet and Ghoshal [34], and Burt [8] suggests that key idea behind social capital building is that networks of relationship involve a valuable resource for providing people with privilege access to information and opportunities. The interpersonal dynamics between individual of networks are equally important as having the social network of individuals. Thus, the implication of positive interactions that take place between individuals in the network is significant. This leads to the success of building the social capital in both the organizational context as well as the VC [30]. We suggest that the development of social capital implies creating the opportunity, the motivation and the ability for knowledge sharing in VC. Therefore, our propositions have some complex implications in the sense that VC emerges as a new form of community, which exists without a formal structure and it transcends across space, time and distance. Furthermore, framing these antecedents based on the

organizational perspectives presents and contributes a new outlook of the key idea of social capital building and social exchange network. But more importantly, it helps to promote a better understanding of the process of building the social capital in a VC.

A study by Fairtlough [14] suggest that when a high degree of innovation and speed is required, the elimination of job descriptions, enhanced flexibility and initiative, as well as increased self-motivation would be the key success to effective organization. In line with these suggestions, we thus propose:

Po: Flexibility and mobility of a VC structure allows sharing of knowledge when exchange, conflict, and coercive relations exist through sanctions and thus able to build successful social capital.

Putnam [43] promotes trust as an essential component of building and sustaining social capital as it helps increasing cooperation. The greater the level of trust within the communities, the greater the likelihood of cooperation in which the end result all leads to enhanced trust among members or social actors. Nahapiet and Ghoshal [34] also emphasize that over time a culture of cooperation would surface among this trusted group of people, which can be strengthened through social interactions. However, this social relationship can wither if it is not maintained. Thus, interaction is a precondition for the development and maintenance of social capital [4].

P1: Trustworthiness and interactions among members involve preferences and beliefs among members for effective knowledge exchange and social capital building in VC.

P2: A high level of trust and cooperative spirit among members promotes lower transaction costs, stronger social relationships, and stronger social structure in VC.

There is also a relationship between trust and membership. Membership reflects the degree of civic engagement and the nature of horizontal relations between individuals as members who has established the necessary trust between them. Additionally, membership describes the element of cohesiveness, which is expected to exist in any social relationship. This acts as glue, which bonds the members together. McGrail et al. [32] stipulates that membership measures have not focused on membership of national organizations such as environmental groups or union because they are considered hierarchical and bureaucratic that is though as not to generate much social capital.

P3: A non-hierarchical and informal structure of VC promotes cohesive membership in order to establish a strong social and trusting relationship in social capital building.

The commitment to the community increases when people continue to volunteer [16]. Volunteerism represents selfless actions that promote community spirit and civic participation; while at the same time, changes the volunteer's self-concept to promote further volunteerism [38]. Active volunteers are those who are motivated because they perceive equitable and rewarding relationship and thus are more likely to continue their services [39]. Therefore, this act of volunteerism is a precondition to promote and sustain loyalty and commitment of the members.

P4: An active role of volunteers to facilitate and support knowledge sharing activities in VC emerges when there are elements of benefit and control in their social exchanges.

Reciprocity increases trust and refers to the simultaneous exchange of items of roughly equal value and continous relationship of exchanges at any given time--repaid and balanced [11][41]. Furthermore, Bullen and Onyx [7] highlights that social capital is a combination of short term altruism and long term self interest as it does not only imply the immediate and formally accounted exchange of legal or business contract. The individual provides a service to others or acts for the benefit of others at a personal cost. Yet, based on general expectations of human nature, there is always a need for reciprocal acts where their kindness would be returned at some undefined time in the future. Additionally, when a community has a strong reciprocal relationship, people express their care and interest for each other more often. In turn, this relationship encourages the knowledge sharing that form the social capital.

P5: The higher reciprocal element exists among weak power members than equal and strong power members with regards to sharing of knowledge.

Only effective management and efficient role played by a leader will reduce the costs and accelerate the development of new products and services in an organization. Furthermore, organizations will need to react faster and use its resources such as social capital more efficiently in order to enhance knowledge sharing. Likewise, effective creation of knowledge sharing by the leader promotes efficient distribution of the social capital in an organization.

P6: The role of leadership facilitates the integration and distribution of knowledge sharing activities among members in order to form social capital in VC.

7. Conclusion

Social capital is an important resource for the sustainability of virtual communities. Virtual community provides a new platform for researchers to understand the dynamics of social networks that takes place in the virtual space. It also provides opportunities for understanding the process of social groups formation by taking into considerations the antecedents, which are expected to promote greater exchanges of knowledge and then translated as their fundamental assets such as social capital. We suggest that community can exist in both the physical as well as virtual space. We first conclude that social capital provides opportunities for societies to resolve collective problems more easily by sharing knowledge. Each member of the community accomplishes this by doing his or her share. This adds more synergistic values when people cooperate and are committed. Second, social capital facilitates communities to advance smoothly when they are bonded with trust, produce less everyday business and social transactions cost when they have repeat interactions with other fellow members of the community. Third, social capital creates enhanced awareness of the many ways in which ideas and knowledge are interlinked to develop character traits that are good for the rest of society [43].

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