Sense of Virtual Community—Maintaining the Experience of Belonging

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Abstract

E-commerce strategists advise companies to create virtual communities for their customers. But what is involved in establishing and maintaining virtual communities? This paper addresses two questions: Does a sense of community similar to that sometimes observed in physical communities also occur in virtual settings? And how is a sense of virtual community maintained? These questions are examined in an intensive study of an established virtual community called MSN. MSN members experienced a sense of community, but the dimensions of sense of community differed somewhat from those reported for physical communities in ways plausibly related to the differences between electronic and face-to-face communication. The experienced sense of community in MSN was actively maintained through the social processes of exchanging support, creating identities and making identifications, and the production of trust. Again, these processes are similar to those in non-virtual communities, but related to the challenges of electronic communication. The findings suggest a process model of sense of virtual community creation and maintenance that is simpler and more powerful than previous theories.

1. Introduction

Electronic commerce strategists suggest that one route to business success is the creation of virtual communities among consumers of a company's products [11]. For example, Amazon.com is noted for the book reviews contributed by customers, and the Kaiser Permanente health care maintenance organization has set up discussion forums for members with various medical conditions.

From reading the e-commerce strategy literature, one sometimes gets the impression that creating such virtual communities is easy: if a company builds a virtual meeting place, customers will come, and a community will form. But research on human communities suggests that the outcome is by no means guaranteed. People may live in the same geographic area but not treat each other like neighbors; indeed, members of their "personal communities" may live far away [36]. Therefore, it is important to understand whether and how an experienced "sense of community" [6, 22] develops in virtual settings and how it is maintained over time.

In this paper, we examine these issues through an intensive study of a successful, established virtual community we call MSN. While MSN was not formed under the aegis of a business organization, it has members who sell products related to community interests, and it is self-maintaining—a goal toward which the sponsors of many discussion lists aspire. Thus, MSN is an instructive example for people interested in business-sponsored virtual communities.

We demonstrate that the members of MSN experienced MSN as a community, similarly to the way people experience effective face-to-face communities. In addition, we show that the experienced sense of community in MSN was actively maintained through the social processes of exchanging support, creating identities and making identifications, and the production of trust. Because we studied MSN well after its formation, we did not observe the initial emergence of the sense of community in MSN. However, following an established sociological and anthropological tradition [8,34], we propose that MSN's sense of community grew out of the same social processes that now maintain it.

2. Theoretical background

The concept of sense of community (SOC)—feelings of connection and belonging to a social grouping—leads to important outcomes in face-to-face organizations and human communities. In work organizations, SOC increases job satisfaction and organizational citizenship behavior—loyalty, civic virtue, altruism, and courtesy [6]. In place-based communities and face-to-face communities of interest, sense of community leads to satisfaction and commitment and is associated with involvement in community activities and problem-focused coping behavior [22].

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The SOC concept raises thorny conceptual and methodological issues. If community is defined in terms of "place", e.g., a neighborhood, then objectively measured citizenship behaviors (e.g., providing support) and an affective or experienced sense of community are easily distinguished from the community itself. But when communities are defined, as they often are, in terms of interests shared by geographically dispersed members, it becomes harder to differentiate among the social group, community behaviors, and members' lived experience of being "a community". Thus, SOC is sometimes understood as an *outcome* of living in a community and is sometimes taken as the *definition* of community itself [9]. Conceptual ambiguity is even more likely in virtual settings, where routine electronic interaction patterns are often erroneously assumed to designate "virtual communities" [13].

We start this section by defining, and differentiating among, face-to-face and virtual neighborhoods (or "settlements") and communities. We argue that community behaviors and experienced sense of community are what differentiate between place-based groupings and true communities. We next describe what is known about the SOC concept and how SOC develops. Finally, we present our research questions.

2.1. Face-to-face and virtual settlements and communities

Most of us believe we know a community when we see one [16]. However, a comprehensive definition of community has been difficult to construct [13]. Both place-based communities (e.g., neighborhoods) and communities of interest (e.g., stamp collectors) have been studied, but place-based communities are often taken as the standard in community research.

Recent research challenges the notion that place-based communities are the locus of community feelings and behaviors, such as the giving and receiving of help and emotional support. Wellman [36, 37] found that members of a geographic neighborhood constructed "personal communities" of people, often living far outside the neighborhood, who provided emotional, domestic, and financial support. In other words, *physical* communities and *experienced* ones do not necessarily coincide. Therefore, until we can demonstrate the existence of community behaviors and feelings (a sense of community) among the members of a geographic neighborhood, we may not be justified in calling the neighborhood a community.

Borrowing from anthropological usage, Jones [13] made similar points about the differences between *virtual settlements* and *virtual communities*. Objectively measured behaviors beyond a threshold level—such as level of computer-mediated interaction, proportion of public communications, proportion of active members, and continuity of participation—can be said to define a virtual settlement. But for a settlement to qualify as a virtual community requires the presence of affective bonds among the members [13]. Since not all virtual settlements

are virtual communities (just as not all neighborhoods are communities), it is important and interesting to consider how a *sense of virtual community* (SOVC) develops and how members maintain it over time.

Following Jones' usage, we use the term "virtual settlements" to designate virtual social groupings that do not necessarily exhibit the properties of a "virtual community"—that is, community-oriented behaviors (like helping) and the affective bonds that, following community researcher's usage, we call the *experienced* sense of community. Our interest is in whether an experienced sense of community exists in particular virtual settlements and how it emerges and is maintained over time.

2.2. Sense of community and sense of virtual community

Community researchers have been interested in the SOC concept since at least the 1960s. McMillan and Chavis [22] defined SOC as "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith the members' needs will be met through their commitment to be together." But a consensus definition of SOC has not emerged. SOC may be unique to each community [32] and hence "highly particular and localized" [30]. Consequently, a way to *describe* SOC in particular communities is needed. The approach to describing SOC that is most accepted for its theoretical basis and qualitative empirical support is that of McMillan and Chavis [22]. In this framework, SOC has four dimensions:

- **Feelings of membership**: feelings of belonging to, and identifying with, the community.
- **Feelings of influence**: feelings of having influence on, and being influenced by, the community.
- **Integration and fulfillment of needs**: feelings of being supported by others in the community while also supporting them.
- **Shared emotional connection**: feelings of relationships, shared history, and a "spirit" of community.

This model applies to both place-based communities and communities of interest [22]. But does it apply to virtual settlements—settlements in which members interact via computer-mediated communication?

In a growing literature on virtual communities, researchers have discussed the feelings and behaviors of members. SOC has not been a particular focus of study. However, theoretical analysis and descriptive research suggest that a sense of community may exist in some virtual settings. For example, empirical research on virtual communities has identified evidence of the following behaviors:

- Membership, boundaries, belonging, and group symbols [2, 3, 7, 10, 12, 14, 19, 26]
- Influence, in terms of enforcing and challenging norms [3, 14, 17, 18 ,21, 27]
- Exchange of support among members [3, 5, 10, 28, 29]

- Shared emotional connections among members [10, 28, 29].

Clearly, objective behaviors corresponding to the lived experience of SOC occurs in at least some virtual settlements. The questions remain: do members of (some) virtual settlements actually experience a clear sense of community? And, if so, how is it developed and maintained over time?

2.3. How sense of community develops

In addition to their descriptive framework of SOC dimensions, McMillan and Chavis [22] proposed a theoretical model that specified 1) the origins of each SOC dimension considered independently and 2) how the dimensions interrelate to produce SOC. In brief, the origins of the four dimensions are:

- **Feelings of membership:** arise from community boundaries (deviants help establish boundaries), perceptions of emotional safety, members' sense of belonging to, and identification with, the group, personal investment of time into group, and a common symbol system.
- **Feelings of influence:** emerge from processes of maintaining norms within the group.
- **Integration and fulfillment of needs:** come from the rewards of being a member such as status in the group, competence in functioning in the group, shared values, and meeting other's needs while having one's own met.
- **Shared emotional connection:** develop from frequent interaction, high quality interaction, discrete events, shared history and crisis, investment of time and resources, the effect of honor and humiliation for members, and spiritual bond among members.

McMillan and Chavis did not test their explanatory model, and other researchers have only examined parts of it. A number of community psychologists have attempted to validate McMillan and Chavis' SOC definitional framework or to develop new definitions and measures of SOC. In addition, researchers have attempted to predict SOC from the characteristics of communities and their members. For instance, Burroughs and Eby [6] hypothesized that employees' need for affiliation and tenure, size of workgroup, number of friends, transactional contracts (e.g., benefits) and relational contracts (i.e., intrinsic motivations) would lead to SOC. (Only relational contracts made a significant positive contribution to SOC.) Zaff and Devlin [38] found that physical components of environment led to SOC, but then concluded, in essence, that something else leads to SOC, too. Royal and Rossi [31] found that organizational variables (perceived orderliness of students and support for innovation) and time related variables (employee tenure and time spent with students and other staff) led to a very particular SOC in a school. Schuster [33] examined the processes of exchanging support that led to SOC in a writers' group in an assisted care home for the elderly, but did not define SOC. In short, no one has tried to test McMillan and Chavis' explanatory model of SOC formation as a whole,

and no one has tried to replace it. McMillan and Chavis' [22] conceptual model stands, largely unchallenged, as the last word on the origins of SOC.

For the empirical researcher interested in SOC development, the lack of parsimony and the complexity of McMillan and Chavis' theoretical model are problems. Each of the four interacting factors hypothesized to produce SOC is said to have different determinants. Furthermore, some of the propositions have a troubling circularity (e.g., feelings of influence *emerge* from processes of *maintaining* norms). Finally, empirical SOC researchers tend to sidestep the analysis of the *processes* (e.g., the giving and receiving of support) that lead to SOC in favor of searching for the situational *variables* that correlate with SOC. In other words, most empirical researchers like Burroughs and Eby [6] and Royal and Rossi [30] have replaced McMillan and Chavis' [22] complex "process theory" formulation with a "variance theory" one [20, 24].

These theoretical issues can be resolved by streamlining McMillan and Chavis' theory as a process theory with several characteristics. First, the variance theory elements added by empirical SOC researchers are removed. The variance theory approach is not particularly well suited to problems in which the outcome (SOC) sometimes happens and sometimes does not [24]. By contrast, process theory explicitly acknowledges the role of random events in the production of certain outcomes (e.g., meteors and dinosaur extinction).

Second, the SOC outcome is viewed as a holistic result of several interacting processes, replacing the formulation in which each dimension of SOC has a separate origin. This theoretical structure is particularly well suited to problems in which the outcome takes on different qualities in different environments, as prior research has shown for SOC [30,32].

Third, the process of SOC *development* is subsumed under the process of SOC *maintenance*. This approach, which has a respectable tradition in sociology and anthropology [8, 34], assumes that it is not particularly important or difficult to explain or how a behavior gets started—it could be the result of an accidental behavior by a member or a deliberate initiative on the part of community leaders or business sponsors. Instead, what is important is how the behavior becomes established and is maintained over time—the assumption here being that, without maintenance, the new behavior will be extinguished. Consequently, many social theorists focus simultaneously on behavior and the feedback loops by which behavior is maintained [34].

2.4. Summary and research questions

Prior theory and empirical research on geographic neighborhoods and communities of interest suggest that sense of community—feelings and affective bonds of various types among members—is an important concept, because it is associated with beneficial outcomes like civic participation and support-giving behavior. SOC does not always occur in physical communities, and, when it does

occur, it takes different forms in different communities. There is relatively strong agreement about the dimensions of SOC (membership influence, support, emotional connection), but little is known about its emergence and maintenance.

Prior empirical research on virtual communities suggests that behaviors corresponding to an experienced SOC (e.g., boundary maintenance, norm enforcement, the exchange of support) exist in some virtual settlements. In other words, a sense of virtual community may develop, transforming some virtual settlements into virtual communities. This study is concerned with how SOVC is maintained in virtual communities. In particular, the study raises two research questions:

- Do members of particular virtual settlements sometimes experience a clear sense of virtual community (SOVC) analogous to the sense of community that has been identified in some physical neighborhoods and communities of interest?

- Once established, how is SOVC maintained by members over time?

We answer these questions through an intensive study of a single virtual settlement, called MSN.

3. Method

To study the development of SOVC would require longitudinal observations of virtual settlements over time. But longitudinal research designs entail the risks that the observed virtual settlements would fail or that SOVC would not develop. Furthermore, for the theoretical reasons discussed above, we believe that the more important issue is how SOVC is maintained so that community-like behaviors do not collapse. Sponsors of business-oriented virtual communities are naturally interested having communities that are self-maintaining so that they are not constantly requiring infusions of external resources.

Therefore, we chose to study an established virtual settlement where the likelihood of SOVC was greater. The virtual settlement studied was a newsgroup called Multiple Sport Newsgroup[1] (MSN), founded in the early 1990's for people interested in training for and participating in multiple sport events (e.g., triathlons). This settlement was not business sponsored, but it is otherwise analogous to the kinds of virtual communities of interest that vendors of sports equipment might try to establish—indeed, MSN's members included sports equipment dealers.

Preliminary participant observation indicated that MSN met the objective criteria, proposed by Jones [13], for a virtual settlement with the potential to be a virtual community. MSN is very "active" with an estimated 17,000 daily readers [1] and an average of 100 messages posted per day. A large number of different people (called "posters") routinely post messages to the newsgroup. However, as with all such newsgroups, there are many "lurkers" (who read, but never post). Posters often make direct references to each other's messages and carry on

intelligible "discussions." Members appear to have knowledge of each other, indicating a history of membership. Additionally, during the initial observations, some members displayed a camaraderie that suggested the presence of a sense of community among members.

The research approach was naturalistic inquiry [15], using participant observation and member interviews as our primary method of data collection. Participant observation over a period of seven months consisted of examining characteristics of the newsgroup's software, impressions of the group and its conversations, and collecting posts sent to the group.

We conducted semi-structured interviews with three types of members: leaders (active, well-respected posters), participants (active to occasional posters), and lurkers (readers only).[2] We interviewed this range of members to determine if different types of participants experienced SOVC differently. A total of 10 people were interviewed. Interviews were conducted over the telephone for about 1 ½ hours. Interviews were tape recorded with the interviewees' permission and professionally transcribed.

Analyses were conducted using an iterative process of data collection, synthesis, and validation (see [23]). Methodological quality was assessed using Lincoln and Guba's [15] checklist for trustworthiness. Through strategies such as prolonged engagement, triangulation of methods and data, negative case analysis, thick description, an audit trail, and an outside review of data and analyses, this methodology and its analyses met the criteria for trustworthiness in qualitative research.

4. Findings

We start with a brief description of MSN. Next we consider evidence related to our first research question—whether MSN members experience a clear sense of virtual community and, if so, what it is. Lastly, we consider the processes by which sense of community is maintained by MSN members.

4.1 MSN background

Multiple Sports Network (MSN) is a newsgroup for people interested in participating in, and training for, multiple sport events such as triathlons. Although many members are athletes, others are simply interested in learning about multiple sports. Several prominent members are vendors of specialized sporting equipment.

As an electronic newsgroup, MSN involves asynchronous communication in which members post messages at one point in time and others read the messages later. The types of messages exchanged in MSN include: asking for, and providing, help (e.g., about training for triathlons or buying equipment); sharing personal experiences (e.g., at sporting events); financial exchanges (e.g., selling equipment); and discussions about multiple sport issues. The content of messages ranges

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[1] A pseudonym.

[2] Lurkers were recruited for interviews by means of a posting to the newsgroup.

from the purely informational (e.g., "how do I stop cramps in my calf while swimming?") to the frankly emotional (e.g., "I just finished my first triathlon and here's what happened!"). MSN considers itself to be a family friendly virtual community where cursing is not allowed and flaming (i.e., very hostile and negative messages) is rare.

The three types of MSN members (leaders, participants, and lurkers) vary in level and type of participation. *Leaders* are members whom we identified as being influential in the group, who identified themselves as leaders, and whom other participants identified as leaders. Interestingly, these members are referred to in MSN as the "core group" emphasizing the non-hierarchical nature of their influence. Leaders performed a greater share of community maintenance activities than other members.

Two distinct types of *participation* styles were observed: active vs. passive and public vs. private. Active members, including leaders and participants, posted and responded to messages; passive members, including most lurkers, merely read the messages. (Some participants actually posted more messages than the leaders.) Public participation refers to messages posted to the entire group; private participation refers to messages sent directly to a particular member through a personal email message. Most MSN messages are exchanged in public where the entire group can read them. However, a good deal of communication in MSN also occurs in private. Leaders and participants reported that they often received more private than public responses to their public postings. Some private messages came from other publicly active members. But some messages also came from "unknown" others, presumably lurkers. Prior research on newsgroups has often regarded lurking negatively; but this research shows that at least some publicly passive lurkers participate more actively in private.

4. 2. Sense of virtual community in MSN

MSN members of all types believe that MSN is a virtual community. However, their sense of community is not uniform. Some members experience MSN as a community *of which they are active members*. One leader reported that she had learned a great deal from the community, received a great deal of support in her training, and met people with whom she had relationships. She even admitted, embarrassedly, to quasi-religious feelings about MSN:

> [T]he fact [is that] out of the whole huge community of people, you will find a couple of people who are so...[supportive, but] there's more to it than that. Because of the devotion to the sport, and it's a good group of people. Oh! I don't know. It's just spiritual! (Laughter) [I know it] sounds corny!

Other members experienced MSN as a community *in which they were not as involved as other* members. In

describing the types of posts members exchange, one participant said:

> [MSN] lets you share with other people, like-minded people. So those kinds of posting [sharing experiences] do a lot more to build the community and build up feeling people that you're connected to other people...you're reaching out there to people in a personal way. And more like having a conversation with a friend rather than just leaving a message for whoever might be interested... [However,] I don't want to go too far. You know, in calling it a community...I don't even know if I'd say I'd made friendships over the newsgroup. Because I certainly don't feel about any of these people on the newsgroup the way I feel about the people I race with and train with. Although I get the feeling that other people in the newsgroup are closer to each other than I am to them. So I think there are a lot of different levels of connection in [MSN]. And so, it's like...it's community-like.

Finally, some members experienced MSN as a community *in which other people were active*. One lurker said:

> Yes, I think it [is a community] and actually I think a bunch of [MSN] people know each other personally. I mean I know with one of the latest triathlons, the Wildflower one, they all planned to get together. Like at a specific meeting point before the race, you know, and introduce one another. Then get together after the race and compare results or commiserate depending what was needed. So I mean there have been a number of little in jokes going on about the people who met each other at Wildflower. So I think things like that make it seem like, oh you know this is a real community people have made connections with one another on more than just a artificial basis.

This lurker was unambivalent about her perceptions of MSN as a community, although she herself was not actively engaged in what she considered its community-like behavior.

Clearly, therefore, MSN members believed that their newsgroup was a community. However, their attachment to the community varied with their participation. To further understand conceptualizations of MSN as a community, we examined members' reasons for believing MSN was a community. We identified the following reasons, ordered by frequency of citation by interviewees. The least frequently cited reasons were mentioned only by the most active participants.

Recognition. Members viewed MSN as a community because they could recognize other members. At the most basic level, this means the members recognized other members' names in postings. All interviewees reported that recognizing individual members is an important condition of MSN as a community. Recognition appears to be an important first step in experiencing SOVC.

Identification. Identification goes a step beyond simply recognizing names. Members reported creating an identity for themselves through their postings, and they reported developing an understanding of other members' identities. Identification enabled members to anticipate others' responses to issues and posts. One member described how he began to identify other members:

> [It's] the people [who are the] most vocal to start out…then as I started to learn a little bit more about "who was who" in the [group,] there were people's opinions who became a little more important to me…[Now] I have an idea of how they portray themselves [and] how they think...Some people at a minimum I [just] recognize their names. Some people I recognize their thought process and how they [will] react to something.

Support. Members reported that a good deal of informational and socio-emotional support was exchanged in MSN and that support was an important part of the community. Interestingly, *socio-emotional* support was not considered most important, nor was it the type of support most frequently exchanged. Rather, *informational* support ("what happens if I get a cramp while swimming in the ocean?") was considered most important. Although only a few MSN members actively participated in asking for, and providing, support, *all members* benefited from publicly offered support. One lurker reported that he never asked for help, because if he waited long enough someone else would ask the question and he would benefit from the answer also.

Relationship. Some MSN members believed the newsgroup was a community because they had developed personal friendships with other members. These relationships often developed through private online communication, and they sometimes moved into face-to-face interactions. One leader reported that he presented a public persona in his communication to the group but revealed a more intimate and personal side in his private communications and relationships.

Not everyone in MSN experienced close relationships. Lurkers, in particular, did not appear to form them. However, all types of members reported *observing* relationships among community members and believing that relationships were an important aspect of community life.

Emotional attachment. Members experienced various levels of attachment to the community as a whole. Attachment to the community is more than relationships with other *individual members*. It involves connection to the community *qua community*. Some members reported that their involvement in MSN was important to them, while others were more ambivalent about their attachment. Although the more active members reported being more attached to MSN, level of activity alone was not the major factor in experienced attachment—perception of personal benefit was also an issue. For example, one work-at-home lurker reported that MSN was an important way for her to keep in touch with other people. It served as a way to "see" other people, even when she was home alone. Attachment, then, was related both to activity level and also to the benefits that members obtain from membership.

Obligation. Finally, members experienced various levels of obligation to MSN. Leaders expressed greater obligation to MSN than the less active participants or lurkers. One leader even described a *need* to "give back" to a group that had given her so much.

In sum, MSN members reported experiencing MSN as a community, but their sense of community varied with their levels of participation in the community and their perceived benefits from participating. Members gave many reasons for believing that MSN was a community—reasons that can be viewed as the dimensions of their sense of community. These included: recognition of other members, identification of themselves and others, the giving and receiving of (primarily informational) support, relationship with other members, emotional attachment to the community, and obligation to the community. In the next section, we discuss how the SOVC in MSN is maintained.

4.3. SOVC maintenance processes in MSN

The sense of community in MSN is maintained through three processes: the exchange of support, the creation of identities and making of identifications, and the production of trust.

Exchanging support. Many MSN members participated in the public and private exchange of information and socio-emotional support, and all members observed the public exchange of support. The giving and receiving of support contributed to the sense that MSN was more than a virtual settlement, it was something one *belonged to* and to which one had a sense of attachment or obligation.

MSN members considered information exchange as most important. Information exchange contributed to the belief that membership in the community was useful for meeting members' needs. However, the exchange of socio-emotional support was also valued. When members observed others' exchange of socio-emotional support, they interpreted it as evidence of personal relationships among group members. And when they experienced socio-emotional support themselves, they interpreted this as evidence that they were accepted and valued members in the community. A common post during race season was a "race report" in which members posted long (greater than 1000 words) essays about their races. These posts contained detailed descriptions of their mental, physical and emotional experiences and were often self-deprecating and humorous. From an objective standpoint, these posts were self-serving ("look what I went through"). But to MSN members, they were an exciting, inspirational, and important part of their community. They allowed members to put themselves in a vulnerable position by exposing their weaknesses and then to be supported by the group. Nearly every single race report generated at least one public response of praise and support.

Responses to posts were important. When members did not receive public or private responses to a post they felt rejected. One active member vividly recalled a message he sent that did not elicit the anticipated response. Exchange of support, then, reinforces the SOVC in MSN and is probably also instrumental in developing it.

Creating identities and making identifications. MSN members created an identity for themselves through their postings. While the frequency and content of their postings was an important way to establish identity, members could also make creative use of the limited options available to them in text-based newsgroups. Some members created signature files (sig file) that were automatically attached to their postings. The sig file below comes from a group member[3]:

Figure 1: Example of sig file

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[MULTISPORT NICKNAME]

                                           -   _ o
          '          -  __o        -    </\_
   `    '            -  \<         -   __/\
   /\o_          -  (()) (())        -    /
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"REAL Triathletes don't draft."
*** Ironman [RACENAME AND YEAR]- 13:04:09 ***
http://www.[UNIVERSITY].edu/~[NAME]
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This sig file contains the member's multiple sport credentials, a link to the poster's homepage, and an important normative message to members of the group. The injunction not to "draft" is also a subtle differentiation between community members ("real triathletes") and non-members. Members also created identity by including a witty quote or pun at the end of a post. These quotes were dynamic and often related to the content of the post.

Sig files and witty sayings enabled other members in the community to identify the personality or opinions of those who used them. Some members did not like the sig files, calling them static and boring. Nonetheless, these same members could describe what others' sig files "said" about their authors. Members had additional ways of identifying the authors of posts. They reported getting to know the "voice" and opinions of various members by reading their posts.

By creating identities for themselves and making identifications of others, MSN members crafted a community out of an anonymous and largely invisible mass of potential members. The nameless and faceless became the recognized and known—people to whom one feels an attachment and mutual obligation.

The production of trust. A third process by which a sense of community was reinforced in MSN was the production of trust. People who communicate electronically with unknown others are understandably concerned whether the others actually are who they say they are. This is especially important if members hope to

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[3] This sig file is used with permission with particular identifying information changed or deleted.

develop the meaningful relationships associated with community. In MSN, members used several ways to produce trust.

There was a strong norm in MSN that members would use their real name either in their email addresses or in their signatures. In addition, members publicly discussed their face-to-face interactions with other community members. Some MSN members trained together and met at races. They then described their interactions in posts *to the group*. Although relatively few community members actually met others face-to-face, discussions of "real world" interactions helped members trust each other and contributed to their sense of membership in a community. Face-to-face communication is often viewed as a necessary precondition for trusting online relationships. Interestingly, in our research, relationships formed online sometimes expanded into off-line meetings, and public reports of such meetings became part of the social life of the online community.

In sum, the sense of community in MSN was maintained through three social processes: the giving and receiving of support, the creation of identity and the making of identifications, and the production of trust. These processes were not independent of each other, but interacted to produce the outcome of an SOC characterized by recognition, identification, support, relationship, attachment, and obligation.

5. Discussion

The two questions that informed this research were: Does a sense of community similar to that found in some face-to-face communities (SOVC) sometimes also arise in virtual settings? And once established, how is SOVC maintained?

Regarding the first question, we found that a SOVC had developed in MSN and that it generally looked quite similar to the SOC found in some geographic communities and communities of interest. The table below compares McMillan and Chavis's [22] descriptive dimensions of SOC with those we found in MSN. Overall, the correspondence between McMillan and Chavis' descriptive framework and our own observations of MSN's SOVC are quite close. "Feelings of membership" are experienced in MSN as recognition of other members. "Integration and fulfillment of needs" maps closely to the MSN experience of support. "Shared emotional connections" of two types were experienced in MSN: attachment to the group as a whole, and sense of obligation to "give back" to the group.

"Feelings of influence" did not figure prominently in MSN's sense of community. It is possible that MSN members had so internalized the norms (e.g., no profanity or flaming) that members were no longer aware of influencing and being influenced. Even the *most* influential members (whom we referred to the leaders) were referred to in MSN as "the core group", rather than leaders, indicating that their non-hierarchical influence was not predominant in members' minds. Although we did not observe influence processes at work in MSN when we

studied it, it is likely that mutual influence processes were active in the early days of the community [cf., 19] and that the dimension of influence may have been an important part of MSN's sense of community at that time.

Table 1: Comparison of SOC and SOVC.

McMillan & Chavis' [22] Dimensions of SOC	MSN's Dimensions of SOVC
Feelings of membership	Recognition of members
Feelings of influence	
Integration and fulfillment of needs	Exchange of support
Shared emotional connection	• Attachment • Obligation
	Identity (self) and identification (of others)
	Relationship with specific members

Two aspects of MSN's sense of community did *not* figure in McMillan and Chavis' framework. First, the creation of identity and the identification of other members in MSN are quite different from McMillan and Chavis' "feelings of membership"—defined as feelings of belonging to and identifying *with the group*. Whereas McMillan and Chavis described identification with the community, we observed the sense of an individual's identity *within or by* the group and identification of other *individual members in the group*. McMillan's and Chavis' concept is one of *sharing in group identity*; ours is one of *individuation from group identity*. This distinction may have something to do with the fact that participants in virtual communities can appear and feel much more anonymous than members of physical communities. ("On the Internet, no one knows you're a dog.") Thus it may be psychologically necessary to establish oneself as a distinct someone in a virtual community.

Another dimension of sense of community in MSN that did not figure in McMillan and Chavis' framework is relationships with individual community members. Undoubtedly, most members of physical communities (where sense of community has developed) also experience relationships with other members. But in physical communities, relationships with others do not necessarily form part of the sense of community. By contrast, it may be that, in the anonymous world of cyberspace, the experience of personal connections with specific other people is an important way to differentiate between a virtual settlement and a virtual community.

With respect to our second research question, we found that three interrelated social processes were important in the maintenance of the sense of community at MSN. These processes are: the exchange of support, the creation of identity and the making of identifications, and the production of trust. Again, the exchange of support process is similar to that proposed by SOC theorists and empirical researchers, but the creation identity/making of identifications process and the production of trust process

seem to be specific to the problems of *virtual* communities.

Unlike McMillan and Chavis, we felt no need to identify individual causes for each dimension of MSN's sense of community. The three processes work well together to jointly produce the outcome. Thus, for example, the MSN SOVC dimension of identity is undoubtedly the product of both the process of creating identity and making identifications and the process of trust production. Further, each process can produce multiple outcomes in terms of SOVC dimensions. For example, the process of exchanging support undoubtedly contributes not only to the MSN SOVC dimension of *support* but also to the MSN SOVC dimensions of *relationship* and *obligation*.

In other words, we argue for a much simpler explanatory model of SOVC than McMillan and Chavis' SOC model. In our process model, sense of virtual community does not always occur in virtual settlements. When it does occur, it arises from a set of interacting social processes that also serve to maintain the SOVC. SOVC will differ from one virtual community to the next, but, because of the nature of electronic communication, we expect individuation of identity and relationships to be more important than they may be in physical communities. Also the specific forms of the development and maintenance processes in virtual communities may vary, but we have no doubt that the processes will address in some way the three "basics" of group dynamics: membership, influence, and intimacy [4]. We make no claims that SOVC will endure or that it will remain unchanged: chance events and changes in membership will undoubtedly influence the evolution of virtual communities as they do in physical ones (which have been observed to exhibit growth, decline, death, and renewal).

6. Conclusion

Electronic commerce strategists often argue that the creation of virtual communities among the consumers of a company's products or among its suppliers is a key to business success [11]. One sometimes gets the impression that the requirements for virtual community development are few: build a virtual meeting place and they will come. Our research shows that there's more to it than that. Building a virtual meeting place may produce a virtual settlement. But a virtual community is a virtual settlement in which a sense of virtual community has emerged from a set of community-like behaviors and processes. Community-like processes and the sense of virtual community outcome cannot be guaranteed. They require people to enact them and to continue enacting them over time. Thus, understanding how such processes get started should remain high on the agenda for research in the virtual communities tradition.

Additionally, companies must give special consideration to the types of virtual settlements and virtual communities they want to create. Members will enact these processes only if they perceive a benefit. For example, member-supplied book reviews may endow an

online bookstore with virtual settlement characteristics. But online book clubs or salons may initiate a true virtual community. Companies must rethink the type of virtual groupings they hope to create, focusing on the underlying needs and values of the consumer.

7. References

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