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DONKEYS TRAVEL THE WORLD: KNOWLEDGE MANAGEMENT IN ONLINE COMMUNITIES OF PRACTICE¹

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Abstract

Communities of practice play an important role in organizational knowledge management. Previous research suggests that members in communities of practice rely heavily on personal connections and face-to-face interaction to communicate knowledge. In many organizations today, communication is increasingly electronically mediated. This research investigates ways that computer-mediated communications affect the formation of organizational communities of practice. Utilizing case study methodology, we observe knowledge creation and sharing in an online community. Rich description is presented in support of our finding that this online community is a community of practice that creates and shares valuable knowledge.

Keywords: Online communities, communities of practice, knowledge management

Introduction

Knowledge is an important source of sustainable competitive advantage (Riesenberger 1998; Stewart 1991). For this reason companies are committing significant resources to achieve effective and efficient knowledge management (Alavi and Leidner 1999; Davenport and Prusak 1998). To this end, organizations are deploying new information technologies and applications, and are experimenting with the implementation of new organizational structures. Since research has shown that communities of practice can foster knowledge sharing and knowledge creation (e.g. Brown and Duguid 1991, 1998, 2001; Wenger 1998), the concept of communities of practice has received more and more attention from both practitioners and researchers.

Communities of practice (COP) are “groups of people informally bound together by shared expertise and passion for a joint enterprise” (Wenger 2000). In these communities, individual experiences are shared, new knowledge is created, and problems are solved through interactions between community members, sometimes even without the knowledge of the formal organization to which the members belong (Brown and Duguid 1991). Realizing the inherent capability of COP for handling knowledge, many organizations are now trying to apply the concept to their knowledge management practices in attempts to cultivate such knowledge-embedded communities (Storck and Henderson 1999; Storck and Hill 2000).

This research investigates how COP function in the context of computer mediated communication. Advances in computer data communication and networking have made it possible for people to cost-efficiently “talk” with other people at distal locations without having to leave their desks. In the past decade, the Internet has expanded explosively across the globe, primarily fueled by the two killer applications of email and the World Wide Web. While the Internet was first developed as a tool for researchers to access powerful computers and large database, people now choose to get online to meet other people (Sproull and Faraj 1995). People use various technologies to form online communities, many of which have existed for years (Rheingold 1993). Here we ask how useful online communities are for the purpose of knowledge sharing and knowledge creation. To what extent is the

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concept of “community of practice” applicable to such online communities? How closely do these online communities resemble COP as they have been conceptualized in the non-electronic domain?

Answers to such questions are important to organizations. Organizations have long been providing electronic communication capabilities to their employees. Technologies such as Wide Area Networks, E-mail, Distributed Database, and Electronic Data Interchange successfully help organizations to overcome geographic and temporal gaps and provide access to both people and data otherwise not available. Face-to-face teams are increasingly being asked to utilize computer-mediated technologies to form virtual teams (Townsend et al. 1998). A natural extension of this for organizations is to create online COP and so leverage technical infrastructures already in place, for the purpose of enhancing knowledge management. However, to justify doing so, we need to have a better understanding of how online communities work and how members in online communities create and share knowledge.

The study presented below begins to address this issue. We argue that online communities can be COP, and hence can be valuable for knowledge sharing and knowledge creation. The structure of the paper is as follows: First, we present theoretical background necessary for understanding the framework on which we base our analysis. Here we discuss how online communities differ from conventional COP and what these differences implicate. We use these distinctions to develop our research questions in this section. Next we describe the research methodology used to address the research questions. The following section presents case study and resultant findings. The implications of these findings are discussed and future research streams are suggested in the final section.

Theoretical Background

Online communities differ from conventional communities in that members of online communities interact with each other through primarily text-based, computer-mediated communications. Because communication media change group behavior (Finholt and Sproull 1990), online communities are affected by the media with which their members communicate with each other. Since our research framework relies heavily on Wenger’s description of COP (1998), in this section, we will first introduce the nature of conventional COP as Wenger saw it in order to then examine why and how these communities can facilitate organizational learning. We then examine how things change when COP move online. At the end of this section, we iterate the research questions.

Communities of Practice

Communities of practice are characterized by the concepts of practice and identity (Wenger 1998). Practice defines the domain of a community of practice, while identity defines who the community members are in regards to the practice. Through practice, community members shape both the community as a collective and themselves as individuals. Practice involves the interaction of two processes: *participation* and *reification*. Participation refers “both to the process of taking part in the community and to the relations with others that reflects this process” (Wenger 1998, p.52). Reification refers to the process of “giving form to member experience by producing objects that congeal this experience into ‘thingness’” (Wenger 1998, p55). Participation and reification complement each other.

Wenger argued (1998) that practice defines a community through three dimensions. *Mutual engagement* describes how community members engage with each other in the practice. *Joint enterprise* embodies the shared interest of community members and the goal of the community as a whole, and symbolizes what the community is. *Shared repertoire* records the history of a community’s past engagement, which in turn, can help community members engage in future practice. Through engaging in community practice, members establish who they are in regards to pursuing the joint enterprise. The creation of identity results from the lived experience of participation in specific communities. It cannot be granted or self-claimed, but must be built and maintained through practice, and in this way becomes recognized by other members in the practice. Hence, member identity signals competence.

Both practice and identity can be described as a history of learning. From this perspective learning is “first and foremost the ability to negotiate new meanings of practice” (Wenger 1998). Through learning, community members negotiate new practices based on past and present practice and on identity. Through participation and reification, they push current practice to new levels, and they themselves get new identities.

Learning also results from the effort to achieve new practice and new identity (Lave and Wenger 1991). Based on community members' understanding of current practice, direct experience with past practice, and indirect experience drawn from shared repertoires, community members work together to shape new practice in pursuit of their joint enterprise. They engage with each other to developing and use shared repertoires. At the same time, their identities change. Newcomers become experienced members. Competent members are identified. Some new members become central members, while previously central members may move to more peripheral positions in the community.

How Communities of Practice Facilitate Knowledge Management

COP facilitate learning, first, because it is in practice that relevant and context-rich knowledge resides. The canonical mode of learning emphasizes the absorption of abstract, context-free knowledge, with the intention that this knowledge can subsequently be generalized and applied to real world problems. However, abstract, context-free knowledge simply does not work. Often such externalized knowledge either fails to address the problem at hand or doesn't cover some crucial aspects of it (Stamps 1997). It is by consulting fellow workers, linking back to previous experience, collaborating intensively, and by trial and error that real-world problems are solved. In contrast to this decontextualized conception of knowledge, knowledge generated within a community of practice always reflects current practices and evolves along with the practice itself. As such, the relevancy of new knowledge is manifest concurrently with its creation, as community members negotiate to make collective sense of what has happened, what is going on, and what to do next. In COP, knowledge is not captured as a standalone object, but saved in shared, content-rich repositories. One way that this occurs is through narration (Brown and Duguid 1991). Community members depend heavily upon narration to describe past experience. Using war stories and organizational folklore, community members describe the multiple dimensions and evolution of a "knowledge object" in great detail to one another, thus retaining much of the original context.

Second, COP facilitate learning by providing access mechanisms and strong motivation for knowledge sharing and learning. Access is enabled when members are exposed to context-rich knowledge and, arguably more importantly, knowledgeable members. Since knowledge in communities is embedded in daily practice, access to practice brings access to knowledge (Lave and Wenger 1991). Access to knowledgeable members is realized by knowing who knows what - the subject of transactive memory research (Wegner 1987). Knowing who-knows-what is helpful in retrieving factual knowledge (Hollingshead 1998) and solving complex problems (Stasser et al. 1995). In organizations, knowing the expertise of other team members contribute to team performance (Faraj and Sproull 2000). Transactive memory constitutes part of an organization's knowledge repository, enabling knowledge of who-knows-what to be systematically collected and distributed (Ackerman 1998; Anand et al. 1998).

Knowing who-knows-what is one thing, being able to actually acquire knowledge from those who know is another thing. Many organizations have built knowledge maps, but these are generally designed to meet the needs of human resource departments rather than those of daily knowledge workers (e.g. Microsoft in Davenport and Prusak 1998). Even when such tools are available to knowledge workers, knowing a person's expertise does not necessarily enable others to access that expertise. COP maximize the availability of members' expertise through engagement, accountability, and motivation. Since all members are collectively engaged in a joint enterprise, the culture in communities encourages members to share unique knowledge and personal experience. And often the responsibility to help other members is part of experts' identity. As a result, expert members are expected to be accessible and to respond to requests for their expertise.

Motivation in electronic groups has been researched extensively. Reciprocity theory, interdependence theory, and prosocial theories have all been applied to understanding ways that potential contributors are motivated to contribute to the electronic group (Constant et al. 1994; Constant et al. 1996). COP provide a different lens with which to explore why people share and learn knowledge, that is, through identity change and identity maintenance. In COP, member identity is neither self-claimed nor designated by authorities but rather negotiated in practice. Competency is displayed in the process of interacting with other members of the community, and since knowledge sharing is the basis for these competency displays, sharing knowledge is an important means for gain ones identity. A respectable identity in the community requires not simply knowing domain knowledge, but also being willing and able to help (Wenger 1998).

Third, COP provide the right environment for learning. In COP, learning is viewed as an inherent aspect of practice and is thus inseparable from practice. It is achieved in the process of good practice, but it is not just about the practice (Lave and Wenger 1991). It is about becoming a qualified practitioner in the community (Brown and Duguid 1991). Being involved in real practice provides learners with a holistic view of the practice. More importantly, in this environment, learners can put what they learn to test, and the resultant immediate feedback serves to maximize their ability to assess the validity of their learning.

Online Communities

Online communities differ from conventional COP in a number of ways – here we discuss five differences that we believe are significant for the emergence of online COP. First, online communities usually use text-based, computer-mediated communication (CMC) while conventional COP rely heavily on face-to-face communication (FtF). Not only does FtF interaction enable narration and collaboration – two process underlying knowledge creation and sharing in the face of changed environments (Brown and Duguid 1991), it also helps to establish member identity. FtF involves more social context cues (Sproull and Kiesler 1986) in turn enhancing identity establishment, is felt to be more personal, and allows more immediate feedback than does FtF interaction (Daft and Lengel 1986). Compared with FtF, CMC is a thinner medium and therefore a less optimal choice for knowledge work, (Daft and Lengel 1986). However, media richness theory has sparked widespread criticism. Research found many managers do not select their communication media in ways consistent with this theory (Markus 1994), and neither may community members. Community members may prefer CMC to FtF communication because of its convenience, availability (across both geographical and temporal gaps), and its capability for being able to reach a large number of members simultaneously (Markus 1994). Moreover, as users have more experience with CMC, they are better to use it for expressing non-verbal cues and affect (Haythornthwaite 2001; Hiltz and Wellman 1997; Walther 1995).

A second difference between offline and online COP is the lower cost of membership² of many online communities. While conventional COP are open systems, membership is by no means free, since potential new members must be sanctioned by existing members before participating (Lave and Wenger 1991, p35). Further, in online communities, there is virtually no incremental cost for reaching an additional member regardless of community size, whereas in FtF communities there is generally a limited number of members with whom one member can engage at one time.

And unlike F2F communities, online communities often have no explicit membership criteria. As long as one is connected to the Internet, one can reach an Internet community at any time, with few limits on how many members a virtual community can have or how many members a member can interact with. Online communities tend to have larger bases of membership than FtF ones. The larger the member base, the more knowledge can be brought to the community by its members, with a correspondingly higher likelihood that members will be exposed to new experiences and competencies. Even where connections between members are far and weak, such connections have their own advantages and can contribute to problem solving and new knowledge creation (Constant et al. 1996).

However, the low cost of membership in online communities can be a double-edged sword. For example, since each member brings to the community his or her own understanding of what the community is about, having too many members may make it extremely difficult to converge on the joint enterprise. Interactions between any small subset of members may be occasional and unsustainable. Shared repertoires may be difficult to build and to be understood by most members. And where the joint enterprise suffers as a result, members may not have the motivation to build their identities by sharing information. In the worst-case scenario, members might choose not to build their identities or recognize those of others³, with resultant distrust and low participation levels leading to the decline of the community.

The low cost of membership leads to another characteristic of online communities: large numbers of light participators and non-participators. In online communities, member interaction varies widely. While some members are quite active, communicating with others on a regular basis, others participate in the community only occasionally (Baym 1999; Finholt and Sproull 1990; Zhang and Storck 2001). Whereas individually light-participators may be little involved, collectively they may contribute as much as more active participators (Zhang and Storck 2001). Moreover, in online communities members may lurk, never communicating at all. It is not yet conclusive how detrimental this may be to the online community.

The fourth difference is that in online communities, practice is actually segregated. In conventional COP, practice is weaved in the communication process. In fact, previous research has emphasized the co-occurrence of communicating, working and learning (Brown and Duguid 1991; Wenger 1998). In virtual community, when members are geographically dispersed (which is most likely the case), they have to perform the domain tasks individually. Their participation in the community actually consists of two parts: the domain practice and the communication practice. It is not until communication practice that the members interact with each other about their domain practice (Zhang and Storck 2001).

²By low cost we refer to collective costs of membership as opposed to purely monetary ones.

The fifth difference between online and FtF communities is again a function of the use of CMC. In FtF COP, history remains distributed among community members unless it is intentionally recorded. Reconstructing history requires interacting with community members who may or may not be available or reliable. Moreover, an accurate picture of history often emerges only after integrating information from multiple sources, which makes reconstructing that history even more difficult. By contrast, in online communities the largely text-based content can easily be stored in various formats and made available for various manipulations such as browsing, searching, retrieval, analysis (Donath et al. 1999; Erickson et al. 1999). Thus part of the history of an online community is recorded as the practice is enacted.

In summary, online communities differ from conventional COP in various ways. These differences represent both opportunities and challenges for online communities to become online COP. In another words, online communities can be, but are not de facto, online COP.

Research Questions

This study has been structured around the following two research questions, utilizing the theory of COP as a framework (Wenger 1998). These two questions address the practice and identity aspects of communities of practice respectively:

- Q1: Can an online community exhibit those characteristics of a community of practice related to the capability for practice? That is,
- Q1a. Do its members show mutual engagement?
 - Q1b. Do its members pursue a joint enterprise?
 - Q1c. Have its members been developing a shared repertoire in pursuing the enterprise?

And

- Q2: Can an online community demonstrate the identity characteristics of communities of practice? That is,
- Q2a: Can online community build and maintain its community identity?
 - Q2b: Can members of online community build and maintain their individual identities?
 - Q2c: Can members of online community recognize identities of other members?

Methodology

The research method utilized is a case study of a single online community. 7853 messages from this community were collected over a six-week period and analyzed using qualitative, content-analytic techniques. Below we present the data collection and analyses activities in detail.

Site Selection

The selected community is a moderated online travel forum held by a major Internet portal company in China that holds dozens of online communities. It has been continuously active since it was first introduced in 1998. The portal company provides the necessary hardware and software, but is not involved in daily activities. The community may have one or more moderators or hosts at any one time. The hosts volunteer themselves for the job, and can quit at any time - they are not company employees, though they receive some compensation to cover their expenses³. The company provides them with little training or help. Over the years, different members have served as hosts. One of the hosts at the time of data collection had hosted continuously since inception of the community and was considered to be one of the best on the portal. Hosts are responsible for keeping the community in line. They do so mainly by deleting messages that stray away from the boards' themes. They also have the power to have user IDs suspended, though seldom do they do so.⁴

³ At the time when the study was conducted (summer 2000), the monthly compensation can cover about 72 hours' online expenses

⁴Source: phone interview with the host of the selected site.

Technically, the travel forum is a moderated online message board, equipped with a searching tool to retrieve posted messages by subject or author. In addition, the hosts maintain a best-article collection. The communication in the community is through text-based messages. Members can post a new message or reply to a posted message. To do so, a member is required to have a valid user name, acquired by registering with the company for free. Once posted, the messages appear on the board in threaded format immediately, together with the number of the bytes, the author's user name, the time when it is posted, and the number of hits it has received. In addition to text, members can attach one picture to each message.

The travel forum was selected for its stability, high levels of activity, and longevity. These characteristics were deemed to be important for communities that are most likely to exhibit characteristics of COP, as follows. First of all, members in a new community are likely to behave differently from members in a stable community. Because this community has existed for two years, it is unlikely that members' behavior can be attributed primarily to initial reactions to a new technology or to newness of the community (Rice 1988). Second, it is an active community – at least 100 new messages are posted everyday. Just as COPs require active membership, we selected an online community with active membership. Finally, the travel forum has shown no sign of slowing down. We were interested in a community whose apparent longevity would enable long-term assessment and comparison of findings.

Data Collection and Analyses

Messages posted to the forum are the primary source of data for the study. In general, messages are erased from the message base after one week or so, and no permanent copies are kept. To collect data, the author regularly downloaded messages from the travel forum twice a week, from June 10th to July 28th, 2000. The messages used for analyses belonged to threads initiated between June 9th and July 21st, 2000, during which time there was no major holiday. In total, there were 2123 threads with 7853 messages. The six-week period was selected to control for daily peaks.

In addition to the downloaded messages, we collected artifact information from the forum and the company website, including the FAQs and instructions for newcomers, and copyright policies from the company. We also conducted an informal, unstructured phone interview with the one host who had served the forum since its inception. In this phone interview we collected additional information regarding company policy, daily forum operations and host responsibilities, history of the forum, and some anecdotes of the forum.

Data analysis followed a two-phase process, in which the first phase was theoretically driven and the second phase was exploratory. In the first phase, we generated evidence in a deductive mode, our aim being to lend support to the theoretically-derived research questions detailed above. Evidence in support of these questions is presented in the form of message quotes and other details reflecting the ongoing practice of this community. In this way, we utilize rich description to narrate our findings and contextualize it for the reader. In the second phase, we re-analyzed our data in an inductive mode, seeking exceptions to our research questions that could serve to refute them and the theory underlying them. We then revised our interpretation of results in light of this additional evidence. For more detail on this technique, see Miles and Huberman 1994.

Results

Practice in Online Community

As in conventional COPs, evidence suggests that members in the travel forum do engage with each other and pursue a joint enterprise. Their pursuit results in a shared repertoire and this shared repertoire, in turn, greatly facilitates their practice.

Engagement

During the 6-week sampling period, members in the travel forum posted 7853 messages in 2123 threads. On average, 50.55 threads were initiated everyday, with a standard deviation of 13.80. Even on the least active day, 19 threads were initiated. Among the 2123 threads, 637 received no response. The average number of messages per thread was 4.86 for the 1436 replied threads.

As in all online communities, participation is inconsistent across members. In the 6-week data collection period, 766 members initiated threads and 1065 members posted messages in the forum. Many of them (412) posted only once. The two members who

served as hosts during this period each posted 122 and 262 messages respectively. The most active non-host member posted 160 messages, and the top 2% of active members posted 25% of all the messages.

Engagement in the travel forum does not happen randomly, however, but follows certain patterns. The most common pattern is knowledge exchange between members. The most prominent form of this pattern starts with a knowledge-seeking message explicitly requesting responses from other members. For example, one member wrote:

Subject: Regarding Dunhuang and JiaYuGuan, please advise.
I plan to visit the Silk Road this summer, and have a few questions ...

1. Can I go from Dunhuang to Yumenguan? If yes, what is the transportation, how long will it take and how much will it cost?
2. What is the best way from Dunhuang to Jiayuguan? How long will it take?
3. How can I get to see the fresco in of Wei/Jin dynasty in Jiayuguan and the Qiyi glacier? How much time and expenses do I need? Have anybody been there? Is it worth a visit?
4. What is the best way from Jiayuguan to Lanzhou? How long will it take?

.....

Among the replies is:

Subject: Advices.

1. Take a taxi. One day is enough. Cost: a *XiaLi*⁵ for around 230 yuan
2. Take a late bus from Dunhuang and get to Jiayuguan in 5 hours
3. Refer to Lonely Planet
4. Take the evening train leaving Jiayuguan and get to Lanzhou the next morning

A second common pattern concerns coordination between members who are searching for travel partners. Such messages often begin with descriptions of preferred destination, schedule, personnel, and cost, followed by a request for someone to accompany them on the trip. Those interested tend to reply to the original message asking for more details. For example, the following original message:

Subject: What want to visit Xinjiang?
We are planning a trip to Xinjiang. Are you interested in joining us?
The possible route is: Guangzhou – Dunhuang – Jiayuguan – Turpan – Yining – Kuqa– Kashi – Yecheng – Hotan
We already have 3 people (1 male and 2 female), all enjoying traveling around.
If you are interested, please tell us your gender, travel experience, as well as your suggestions on our trip.
Email: XXXX@XXX.XXX Your reply is appreciated!

was followed by the response:

Subject: I am also leaving for Xinjiang.
I am leaving for Xinjiang around August. I am in Beijing. One male and one female. When do you leave?

The third pattern is about social interactions between community members. For example, it is common practice for members, particularly active members, to report their progress to others during the time they are traveling. In a short report of this type, the member typically expresses gratitude to those who helped them make the plan, provide the most up-to-date information on their route, and describe their recent travel experiences. These messages often receive a lot of responses, most of which are encouraging and/or applauding. For example, one member who was traveling in Tibet wrote a short subject-only message:

Subject: XXX (his own user name) has arrived in Lasha safely, and still in a pretty good shape.

These three patterns of engagement illustrate the moves taken by members as they go about the practice of providing collective travel information.

⁵XiaLi: the model of a relatively cheap taxi very popular in China.

Joint Enterprise

The open nature of online communities creates a challenge to the achievement of the joint enterprise, since the objectives of the enterprise are well known to central, current members but less so to newcomers. Newcomers, purposefully or accidentally, may impose their understanding of the “joint enterprise” on the whole community and thus threaten it. Thus an important function of central, current members is to realize when this is occurring and take action to forestall adverse effects. When this happens, it provides indirect evidence of the nature of the joint enterprise.

Although there is no written statement on the purpose of the travel forum, there seemed to exist an implicit agreement between community members that the forum serves to promote backpacking in China and to exchange knowledge between backpackers. In the FAQs in the forum, the host listed three kinds of messages that are not allowed in the forum: advertisement, chatting, and messages that are irrelevant to travel. The most powerful correction to violations is exerted by the forum host. Unfortunately, we don’t have information on how many messages hosts deleted every day. Occasionally, members would follow an inappropriate message, pointing out that the message doesn’t adhere to the intention of the forum. In cases where members had very different ideas on the appropriateness of a message, a debate sometimes broke out and could become very heated. One such debate centered on what to do with advertisements posted by travel agencies. Some believed they should be deleted, but others insisted that they also contained useful information and therefore should be tolerated. Finally the two sides reached a compromise, agreeing that business advertisements should not be posted in the forum. However, in such cases the host would have the option of not deleting the message as long as it explicitly identified itself as a business advertisement.⁶

To the extent that members were able to converge on a process for eliminating messages that did not contribute to the joint enterprise, we can infer that this online community has a shared conception of their joint enterprise, and in this way resembles a FtF COP.

Shared Repertoire

The travel forum is an idiosyncratic place where members use terminology that is unique to this forum. Newcomers feel they are entering a strange place with its own language. Many words are changed to their homonyms in Chinese. For example, members call the travel forum *donkey pot* because the two phrases are pronounced similarly in Chinese. As a result, members call themselves either *donkeys*, or *pickles* (because it is pickle that is in a pot). *Big-shrimps* are members who are experienced travelers. *Homework* is the report members submit to the forum once they return from a trip. To post a message is to *pour water*, for the forum is the pot. Dinner or lunch meetings between members is called *corruption*, though they pay for their food and drink with their own money. These terms appear so frequently in the messages that they have to be explained in the FAQ to newcomers. Such local vocabulary is certainly part of the shared repertoire of the community.

Help files and FAQ illustrate another important aspect of the shared repertoire. FAQ include various questions, ranging from vocabularies to negotiating the software interface. There are two help files: one survival manual for newcomers and one users manual. The user manual provides technically-oriented details on such topics as posting messages, searching messages, browsing messages, and connecting to related forums. The survival manual introduces the forum, its operations, and basic usage. It also describes the range of acceptable member behavior and so serves as a repository of behavioral norms.

A most important part of the shared repertoire for members is the best article collection, maintained by the forum host. Though there are no written selection criteria for this collection, members do not challenge the hosts’ judgments. Selected articles are grouped mainly by destinations, as well as by topics such as environment protection and outdoor equipment. All of these articles are authored by community members. Many record members’ first-hand experiences of travel at a particular destination. Compared with other available travel guides, these articles provide detailed narration of members’ personal experiences, and forum members make extensive use of this repertoire. Many of them refer to articles in this collection before making their own travel plans. Inquiring members are often directed to this collection, and an FAQ asks community members to search this collection first before posting a question to the forum.

Another significant indication of a shared repertoire is the implicit message format that members follow when composing their homework. They named this particular format *gonghuae*, which means “attacking strategy”. Many messages in the best article collection follow the *gonghuae* format. For example:

⁶Source: phone interview with the host of the selected site.

... The guesthouse of Shigatse district government locates on Shangdong Road (before known as Beijing North Road), against the government hall across the street. After a long, rough way, you can take a good rest here. A standard room in the new building, with bathroom and TV, is price at RMB\$80 per day in the off-season, and \$100 in the peak-season. A dish with meat in its restaurant cost \$7, and you can feed yourself well with \$12. It is safe and quiet. Compared with other crowded hotel, this guesthouse, in my humble opinion, is really a good place for midway break. ...

In a gonglue, knowledge is embedded in personal experience, as illustrated in this example. Unfortunately we lack information regarding how the format of gonglue evolved into being. Interestingly, although there is no formal definition of gonglue, members can tell that a message is a gonglue when they see one. They refer heavily to gonglues when making their traveling plans, as shown in the following subject-only message:

Subject: Please advise destinations around Guangzhou to consider for a two- or three-day trip. Better with backpacking gonglue.

As illustrated by the existence of idiosyncratic language, behavioral norms, and implicit message formats, this online community clearly has shared repertoires that are used by newcomers and active members to engage fully in this online COP.

Identity in Online Community

Community Identity

For email distribution lists, the name, norms, statement or purpose and message style all serve to imply the identity of the list (Finholt and Sproull 1990). The purpose of the travel forum is to promote backpacking and help backpackers to exchange information among members. Neither the hosting company nor the forum explicitly states the identity or purpose of the forum nor are these implied by the name “Travel Forum”. There is no proclamation of who-we-are and what-we-do. Yet the forum is widely recognized by its members as well as members of other communities, and forum members are proud of being a part of that particular online community.

The travel forum distinguishes itself from other communities foremost with its logo. Not every forum has its own logo. The travel forum’s logo is the outcome of a design competition in which all members were invited to serve as designers and judges. Hence the logo resulted from negotiations between all forum members. This forum logo is also available to all forum members on memo pad, post-its and stickers. Members take the logo with them when they are traveling and use it to signal other members, which is helpful since they often have never met each other face-to-face. The logo and its associated artifacts serve as a focal point for the members of this online community.

Second, there are several interface features of the travel forum that distinguish it from other forums held by the same portal company. For example, the company prepares a standard interface for all its communities, but the appearance of the travel forum is different from that of others. The background image of the forum is a faded forum logo. And while the company has set the number of messages appearing on a community’s homepage to 200, the travel forum’s homepage has a maximum of 500 messages, saving members the trouble of having to turn pages frequently. These distinguishing features of this forum were suggested by the members themselves, and not set until all members had had the opportunity to provide their input on the decision.

Finally, members identify themselves with the forum. They are proud to be members of the community. Following the nickname of the forum, they proudly call themselves *donkeys*, which is a metaphor for tolerance, persistence, contribution and modesty in Chinese literature.

Member Identity

In the travel forum, individual members and particularly active members, work to build and maintain their individual identities. As in conventional COP, they do this by participating in the community’s practice. The host is a one example – the most respected member in the forum, he earned his reputation through his diligent contributions to the forum, not only as a host, but also as a skilled member. His efforts in both keeping the forum running and contributing to the forum are highly appreciated by the members. One member wrote the following message in excitement praising the host’s effort in running the forum:

Our neighbor forum is praising our host. To be honest, I've been to many forums. XXX (the user name of another host) from another forum and XXX (the host's user name) are the two best ...

Another message addressed to the host referred to his experiences in backpacking (despite the fact that he actually knew little about the geographic area):

XXX (the host's user name), seems to me that you know everything. I want to go to Yan'an. Would you please tell me if it is OK for me to get to Niulin, Shanxi first, cross the Yellow River and then go to Yan'an by bus?

In addition to serving as host, there are other ways for active members to build their own identities. The most common of these is to build identity through displaying ones skills or knowledge in the content of the messages one posts. In the following message, the author initiated an information request of another member based on the extensive knowledge of the destination displayed by the author in his previous messages:

Subject: XXX (member's user name) – What should I know if I am going to Xinjiang in July or August?
I am leaving for Xinjiang and want to learn something about it, such as climate and food. In the last few days I read your brilliant articles. You sure know a lot about Xinjiang. Do you have anything to teach me?
Thanks a lot.

Another way to build identity is through resources (Constant et al. 1996) such as, but certainly not limited to, geographic locations. Members usually provide important information about themselves such as the city in which they live. When distant members visit members' home cities, they often ask local members for help:

Subject: XXX (a member's user name), please help
... I am going to be with donkeys in Sichuan but haven't found a place to stay yet. Do you know anything about renting an apartment around YuDaiQiao? ...

By using the forum to display expertise such as hosting skills and geographic knowledge, individual members utilize this online forum to build their online identities in the same manner as members of FtF COPs build their identities in real-world practice.

Discussion

Overall, using Wenger's characterization of communities of practice (Wenger 1998) as the framework, this study suggests that online communities do display many of the important characteristics of traditional COPs. We can thus suggest that online COPs are a potentially useful means for enhancing organizational knowledge management, especially for organizations that are geographically dispersed. As COPs move from a context of FtF co-location to that of mediated dispersion, the potential exists for their development and practice to be compromised by differences between FtF and CMC interaction, as discussed above. While this study cannot prove that this won't happen, it does illustrate ways that one particular online community manifests the practices and identity characteristics typical of traditional COPs. The travel forum has developed unique ways to overcome the challenges of online community creation.

Members in the travel forum show mutual online engagement by initiating threads, replies to requests and by joining online discussions. Their engagements do not appear to be hampered by the use of computer-mediated communications. Rather, members appear to have adapted to the new communication method, innovating to circumvent the shortcomings of online interaction – such as missing non-verbal cues, and taking advantage of the strengths of online groups – such as message persistence over time. Moreover, the concern that large numbers of members might threaten engagement between members seems to be unwarranted. Though there are a large number of members in this forum, only a subset of them are regular, active participators. Adverse impacts of lurking and/or very light participation seem to be small. More interestingly, light participators may potentially provide weak ties that can actually help the practice of online communities by bringing in new knowledge and new perspectives (Constant et al. 1996; Zhang and Storck 2001).

Clearly the travel forum is a manifestation of a joint enterprise. Members “enforce” the joint enterprise in their active daily engagement: hosts delete irrelevant messages and members do not follow them or criticize their authors. Moreover, the maintenance of the joint enterprise is done with minimal resources. There is virtually no organizational support for the community

at all. The hosts and all other community members work together to pursue the joint enterprise. Hence, although the joint enterprise is implied, community members make explicit efforts to uphold and nurture the joint enterprise.

The travel forum has developed an intriguing shared repertoire consisting of local vocabularies, FAQ, help files, and importantly, the best article selection and the unique gonglue message format. These items reflect members' adaptation to CMC. For example, the use of Chinese homonyms in local vocabularies would be indiscernible in face-to-face communication, and the best article selection is enabled by the persistent nature of these text-based messages. Gonglue as a genre for knowledge sharing reflects the community's effort in facilitating knowledge sharing between community members (Orlikowski and Yates 1994; Orlikowski et al. 1995). Community members contribute to their shared repertoire and make extensive use of this repertoire when making travel plans and when traveling. It seems that the geographically-disbursed nature of this practice has not prevented members from practicing and developing this repertoire. On the contrary, it appears to have facilitated the formation and use of this shared repertoire.

Just as in conventional COP, community identity and member identities in this forum are formed and maintained through the practice. The community is recognized as one of the best forums held by this company. Individual members, especially active members, gain different identities reflecting their unique characteristics: traveling experiences, knowledge of particular destinations, role in the community, resources owned, etc. Moreover, in their participation members build not only their individual identities but also that of the community. They differentiate themselves collectively from members of other communities by calling themselves donkeys. They designed the community logo and use the logo to decorate the forum and signal to each other when on the road. Clearly these ways of identity development reflect clever adaptation to CMC-based interaction.

These findings are not intended to be generalizable, as the case study methodology makes clear. Thus we cannot extend this research to other domains, nations, or technologies. We present rich description of ways that this online community resembles and extends traditional COPs in order to contribute empirically to the theoretical debate about the viability of online COPS. We believe this is an important and timely topic, since the proliferation of online content, the scarcity of attention resources, and increasing ubiquity of telecommunications underlines the importance of organizational knowledge management. This research suggests that online COPs are not simply the agenda of the technologically deterministic, but have sprung up in the "real world", apparently unimpeded by limitations of the technology. Like traditional COPs, this online travel forum has organically manifested itself outside the realm of intentional design, and knowledge management scholars and practitioners have much to learn from the form that this growth has taken.

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