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A community-based knowledge management strategy to foster economic development and innovation in French-speaking communities outside Quebec

Abstract: Knowledge management (KM) is an emerging discipline that systematizes the capture, codification, sharing and dissemination of knowledge in order to leverage individual, group and organizational intellectual capital. Yet little is known about what conditions facilitate the free flow of knowledge to achieve goals such as learning and innovation. Holsapple and Joshi (1999) recently surveyed ten conceptual knowledge management frameworks and found that none directly addressed knowledge sharing behaviours. A survey of the literature from educational technology, library and information studies and knowledge management shows that the individual knowledge worker differences, the nature of the knowledge to be shared and, the type of knowledge sharing channels they use play important roles in determining the success of knowledge sharing.

The proposed KM model addresses the factors influencing knowledge sharing at three levels: organization, community of practice and individual (Dalkir, K., 2002). This paper focuses on the community level to identify enablers and obstacles to successful knowledge sharing in virtual communities to foster innovation and economic development best practices.

The research methodology currently consists of a series of structured one-on-one interviews, facilitated workshops and roundtable discussions with virtual community members as well as an extensive literature review to identify other virtual community knowledge networking work done to date. This enables us to revise our model based on what has and hasn't worked to date. In addition, social interaction networks will be used in a subsequent phase to map and analyze the flow of knowledge (who was it shared with, what was shared, which channels were used, which, if any technologies were used, whether any tangible artifacts were left behind, etc.) within these communities. The efficiency and effectiveness of the knowledge network will be measured in terms of the impact on innovation for de-marginalization.

One of the testbeds for this research is the Comité national de développement des ressources humaines de la francophonie canadienne, which was founded three years ago with a mandate, including but not limited to addressing the digital divide that leaves the Acadian and Francophone communities outside of Quebec disadvantaged when it comes to sustainable regional development. Over 100 agents are tasked with coordinating regional plans for the community, mobilizing them to promote economic development in such areas as tourism, youth initiatives, rural area development and the creation of a knowledge-based economy. These agents are highly mobile as they serve a large number of scattered communities across

Canada. As such, they constitute a virtual community linked by information and communication technologies.

This research is expected to contribute to the successful nurturing and support of virtual communities in order to promote economic growth as well as to contribute to a more solid sense of identity, linguistic vitality and belonging amongst the Acadian and French speaking peoples outside of Quebec. It is expected that the key technological enablers identified in this research will serve to “de-ghettoize” the isolated members as well as create a channel for the sharing of lessons learned, best practices and innovations for any virtual community.

Résumé: La gestion de la connaissance (GC) est une discipline en plein essor qui permet de systématiser la capture, la codification, le partage et la dissémination de la connaissance, dans le but d’améliorer l’emprise des individus, des groupes et des entreprises sur leur capital intellectuel. Pourtant, on connaît encore mal les conditions qui contribuent à la circulation de la connaissance et permettent d’atteindre des objectifs d’apprentissage et d’innovation. Holsapple et Joshi (1999) ont examiné dix modèles conceptuels de gestion de la connaissance et se sont aperçu qu’aucun ne tenait directement compte des comportements de partage des connaissances. Un regard sur la littérature en technologie éducative, en bibliothèque et sur les études en gestion de la connaissance montre que tant les différences individuelles que la nature de la connaissance à partager et le type de canal de communication utilisé pour échanger la connaissance influencent le taux de succès du partage de connaissances.

Le modèle de GC proposé ici aborde les facteurs qui influencent le partage de la connaissance sur trois niveaux : celui de l’entreprise, de la communauté de pratique et de l’individu (Dalkir, K., 2002). Cette présentation met l’accent sur la communauté, et veut identifier les facteurs qui aident ou qui nuisent à un partage fructueux de la connaissance entre communautés virtuelles pour créer et disséminer les innovations et le développement économique.

La méthodologie de recherche consiste actuellement en une série d’entrevues structurées individuelles, en ateliers et en discussions en table ronde entre les membres de communautés virtuelles, ainsi qu’en une étude extensive de la littérature disponible afin de dépister d’autres travaux sur les réseaux de connaissances de communautés virtuelles. Ceci nous permet de réviser notre modèle en fonction de ce qui fonctionne, ou pas. De plus, une phase subséquente inclura les réseaux d’interactions sociales pour cartographier et analyser la circulation de la connaissance (ce qui a été partagé, avec qui, par quels canaux, au moyen d’une technologie ou pas, et si oui, laquelle, s’il y a eu production d’objets tangibles, etc.) au sein de ces communautés. L’efficacité et l’efficacité du réseau de connaissances sera mesurée grâce à l’impact sur l’innovation et la dé-marginalisation.

L’un des bancs d’essai de notre recherche est le Conseil National de Développement des Ressources Humaines de la Francophonie Canadienne, mis sur pied il y a trois ans pour s’occuper du cas des communautés acadiennes et francophones hors Québec qui sont désavantagées au chapitre du développement régional durable. Plus d’une centaine d’agents sont chargés de la coordination des programmes régionaux de la communauté, se mobilisant pour promouvoir le développement économique des secteurs du tourisme, des programmes-jeunesse, du développement rural et de la création d’une économie du savoir. Ces agents sont d’une grande mobilité, puisqu’ils desservent un grand nombre de communautés réparties dans tout le Canada. Ils forment ainsi une communauté virtuelle, reliée par Internet.

Notre recherche veut contribuer au soutien et à l’enrichissement des communautés virtuelles dans le but de promouvoir la croissance économique et de consolider le sentiment d’identité et d’appartenance des Acadiens et des francophones hors Québec. Nous croyons que les aides technologiques spécifiques

identifiées dans cette recherche serviront à sortir de leur ghetto les membres isolés, tout en créant un canal de communication pour le partage des leçons retenues, des meilleurs pratiques et des innovations de toute communauté virtuelle.

1. KNOWLEDGE MANAGEMENT AND COMMUNITIES OF PRACTICE: AN INTRODUCTION

Knowledge management (KM) is an emerging discipline that systematizes the capture, codification, sharing and dissemination of knowledge in order to leverage individual, group and organizational intellectual capital. Knowledge is increasingly being recognized as the key to success. It is simply too valuable a resource to be left to chance. Organizations need to “understand precisely what knowledge will give them a competitive advantage....deploy this knowledge, leverage it in operations and spread it across the organization” (Wenger et al, 2002). Cultivating communities of practice is one of the best ways of achieving the goals of knowledge management.

Communities of practice (CoPs) can be defined as “a number of people, resources and relationships among them, who are assembled in order to accumulate and use knowledge primarily by means of knowledge creation and transfer processes, for the purpose of creating value” (Seufert et al, 1999). Communities of practice tend to evolve amongst people who share a common language (linguistic, technical, situational etc...), and a common set of values and objectives. Some communities of practice are self-emergent and only need to be cultivated to be successfully established, while others need to be built up from scratch to become high performing. Since communities of practice are continually being augmented by knowledge gained from learning situations by both novices and experts, a CoP's should be regarded as a dynamic structure that facilitates double loop learning (Seufert et al, 1999).

Virtual networks supported by information and communication technology help connect isolated professionals and local pockets of expertise. They can facilitate the diagnosing and addressing of recurring business problems whose root causes cross team boundaries. This process is facilitated as members link and coordinate unconnected activities and initiatives when addressing similar knowledge domains. As members create, collect, package and make available their collective know-how in the form of best practices and lessons learned, they effectively bring the overall performance of the organization up to its highest level.

Etienne Wenger (1998) specified three main characteristics of communities of practice (CoPs) that distinguish these groups from other informal collectives or networks. These three features are mutual engagement, joint enterprise, and a shared repertoire.

Mutual engagement is similar to the connection found in networks but describes relations that are grounded in common interest, activity and purpose. As CoP members interact with one another their knowledge is shared and enacted; “various members of the CoP can offer insights, adopt one another's practices, and share frustrations”(Iverson, McPhee, 2002). Through this mutual engagement they are motivated to negotiate their practices and to reach a consensus on the meanings of their shared actions and tasks.

Negotiation of a joint enterprise gives members a sense of coherence and purpose to the CoP. This sense of joint enterprise allows members of a CoP to recognize that their community is connected through time and space and that it is through this connection that members can communicate and share knowledge toward reaching goals. Community members interact to develop solutions, share best practices, advance their professional goals and manage their position in a larger context. Through these activities, “participants develop a sense of mutual accountability that becomes an integral part of their shared practice” (Iverson, McPhee, 2002).

A CoP’s shared repertoire is the set of resources that it uses to communicate and to accomplish tasks. Stories, jargon, theories, experiences, and other resources are typically captured in a shared repository for members to access and benefit from. The shared repertoire gives functionality to reifications such as information and places them in a social context of the COP, explaining why this information can be employed as knowledge only under certain conditions (Iverson, McPhee, 2002).

The standard lifecycle of a CoP follows five stages of development (Allee, 2003; Wenger et al, 2002, Chps. 4 and 5), which include:

1. potential,
2. coalescing,
3. maturing,
4. active or stewardship and
5. transforming or dispersing.

The lifecycle of a community of practice is illustrated in Figure 1 below. As the community of practice matures, the collective productivity of community members increases. This in turn translates into greater value creation for the organization as a whole.

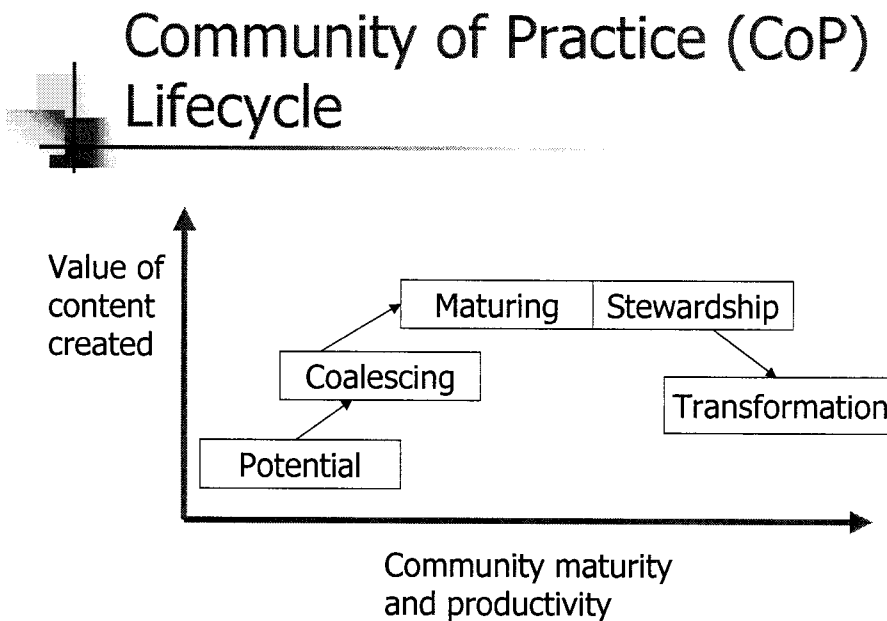


Figure 1: The major stages in the lifecycle of a community of practice.

In the first stage the basis of the community exists but the unification has yet to begin. The people and the common issues and needs are present but the individuals have yet to acknowledge their commonality or potential for sharing knowledge with each other to the greater benefit of all involved. At this stage, there is a need for raising awareness of the benefits of a CoP and to identify the people and issues around which the community members can form. Community champions can play an integral role in helping bring the community from this first phase to the next phase of community life.

In the coalescing phase, people come together to launch the community and they find value in engaging in learning activities and designing the community. Community members and leaders should begin to design and create the community support structures. Community coordinators, communicators and support staff should be coached to ensure that the necessary support is in place. Informal meetings should be initiated, facilitated and documented. These meetings should include dialog on the community identity and joint enterprise. Finally, mapping knowledge flows and knowledge relationships should begin to be possible.

The third phase sees the maturing of the community as it takes charge of its own practices and grows. Community members will be seen setting standards, defining a learning agenda and creating knowledge artefacts. At this stage strong relationships are developing and a sense of commitment to the joint enterprise is evolving. This community growth must be guided and the necessary frameworks, guidelines and measures for the success of the community should be emerging. A shared repository for the captured knowledge artefacts, best practices and other documents is formed and contains documented objects of value to the particular community.

In the active stage, the community is established and needs to manage its voice, gain influence, renew interest and educate novices. During this stage, the community has to put energy into sustaining energy. Communities will often look at the organizational issues that are positively and negatively influencing the continuance of the community life and will organize efforts to address these factors. Community members will begin to see the links to joint learning and their individual career development goals. The community as a group will begin to forge links with other groups and communities to exchange and share learning for both group's benefits.

Finally, healthy communities of practice will disperse once their usefulness has been outlived. The purpose of the community forming has either been met or changes so dramatically that the initial community is no longer constructive. The challenges of this stage are helping people let go of the original community and move on. This is not to say that the relationships are lost but that the community as a working entity has disbanded. In fact, maintaining maps and directories as well as preserving memorabilia, maintaining history and convening reunions are continued tasks for certain designated community members.

Community participants can be defined by their roles and responsibilities. Some of the key roles and their related responsibilities that can be seen in CoPs are those of the champion, members, facilitators, leaders and sponsor. These roles tend not to be assigned as much as are emergent as the community develops and grows. Each role plays an integral part in the health and success of the community with various roles being more critical at different phases of a community lifecycle.

The champion provides “enthusiasm and energy for organizing meetings and communications and is the chief organizer of events, and the administrator of communications.”(Nichols cited 2003). All community members are required to participate actively, to learn and to share their learning with each other although some choose to “lurk” or remain as passive observers for a given period of time. While this last category is typically initially viewed as negative, this should not be the case since lurkers are often novices who contribute less in the beginning but later become highly active community members.

The community facilitator is like a radio/TV show host, who manages the conversations and helps keep discussion focused. As necessary, the facilitator will inject new topics and seed discussion with appropriate content, ensuring that dissenting points of view are heard and understood. These tasks can be carried out during face-to-face sessions or in virtual meetings. The facilitator is critical to ensuring that the knowledge of value in the community is brought to the forefront.

The community leader is easily recognized and acknowledged by the majority of community members. This position is never appointed but emerges naturally as a result of competence and personality. Rank and position do not affect this position since members with lower seniority may actually have more experience in the area of interest or community concern. Additionally the CoP leader can shift as these areas of interest and concern shift or as the community ages through its life cycle.

The sponsors communicate the company's support for a community. The sponsor can play a role in providing necessary resources to the community (time, financial, technological etc...) and can facilitate in overcoming the factors that negatively influence the success of the community. The sponsor will also be “instrumental in establishing the mission and expected outcomes for the community” (Nichols, 2003).

Thus communities of practice are groups of people who often share a profession or challenging task. They interact on an ongoing basis, both in person and through technology-mediated channels such as email, telephone and videoconferencing. Community members share information, advice and insight as they discuss common problems and common needs. They deepen their knowledge and expertise as a result of these interactions. In other words, they network because they find value in the networking.

2. VIRTUAL KNOWLEDGE SHARING: A CONCEPTUAL MODEL

A virtual community of practice served as a case study to validate a conceptual model of knowledge sharing. The sharing of knowledge is widely accepted to be highly social in nature (Seely Brown, 2002). Most knowledge management literature invariably alludes to the importance of social interaction among organisation members as the sharing of existing knowledge leads to the creation of new knowledge.

The conceptual model of knowledge sharing was derived from a survey of the literature from educational technology, library and information studies and knowledge management which

showed that the individual differences between knowledge workers, the nature of the organizational knowledge to be shared and, the type of knowledge sharing channels they use are related to knowledge sharing and the quality of decision making. The conceptual model is summarized in Figure 2 below.

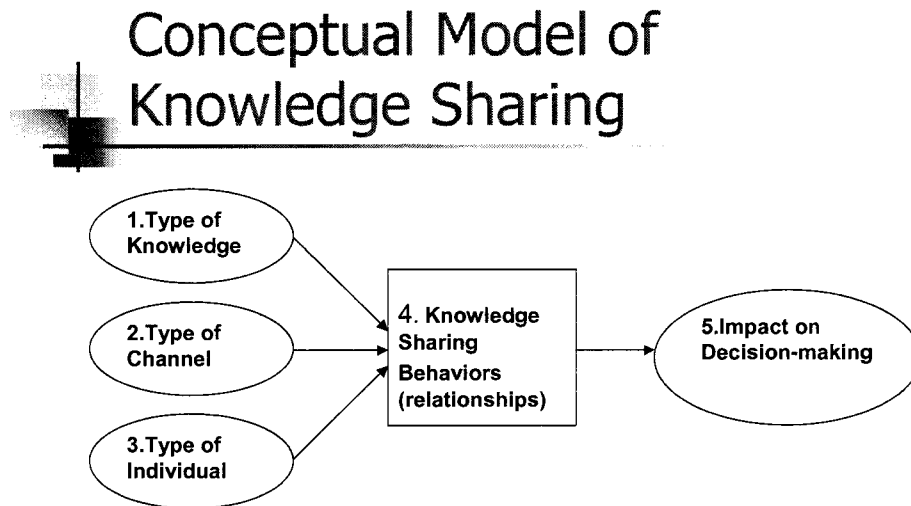


Figure 2: A conceptual model of knowledge sharing in virtual communities of practice.

In this research, the three main components of social interaction that were studied were: the types of knowledge shared, the types of communication channels or media used to share the knowledge and the types of relationships formed to share knowledge. Each is described in further detail below.

2.1 Types of Knowledge Shared

The nature of a knowledge entity or a knowledge object is typically categorized in terms of the tacit-explicit dichotomy. In this dichotomy explicit knowledge is understood as that which is easy to capture, codify and share with others. Tacit knowledge however, is typically tied into skills or expertise and is difficult to share or transfer. While the explicit steps of accomplishing various tasks are easy to transfer, the precise tacitly known techniques, which lead to perfection, are harder to articulate and share. In terms of evaluating the ease in which these two types of knowledge can be shared it is often useful to imagine knowledge “as existing along a continuum of tacitness and explicitness” (Alton and Polytechnic, 2001).

This continuum can then be sub-divided through three measures: codifiability, teachability and complexity. “Codifiability is the extent to which the knowledge can be articulated or represented in documents and words...Teachability is the ease by which the knowledge can be taught to another person...Complexity refers to the number of critical and interacting elements of

the knowledge [is] needed to accomplish a given task” (Alton and Polytechnic, 2001). Knowledge objects are those categorized as increasingly explicit when the codifiability and teachability of the knowledge is high and conversely more tacit when the complexity is high.

2.2 Types of Communication Channels Used

Communication channels are the various media that community members use to share knowledge. The types of channels range from face-to-face communication telephone communication, videoconferencing, virtual collaboration tools and finally email communication. These communication channels can be further typified by their inherent richness and required bandwidth. “The media richness of a channel can be examined by its capacity for immediate feedback, its ability to support natural language, the number of cues (non/verbal) it provides and the extent to which the channel creates social presence for the receiver” (Alton and Polytechnic, 2001). As the richness of a media decreases, as is seen in the shift from face to face communication to email communication, the ease with which tacit knowledge can be shared also decreases. Likewise, the motivation to engage in communicating less explicit knowledge decreases as the social presence of the channel decreases. Picking the right channel to communicate the given knowledge entity becomes a challenge in virtual communities given their inherent limitations and the fact that tacit knowledge is typically higher in value than more explicit knowledge.

2.3 Relationships

The development of non-virtual interpersonal relationships in a physical environment is essential to sustaining virtual communities; “strong personal relationship was felt to be essential to carry the community through the periods of e-communication” (Hildreth et al 2000). These relationships help individuals with issues of identity, confidence and trust. When community members share and learn in a virtual space, knowing the person on the other end of the communication channel, particularly when it is low in media richness, eases the communication and facilitates sharing.

The virtual relationships will also develop and strengthen more quickly when the members are already known in a non-virtual space (Hildreth et al 2000). Established personal relationships also give community members confidence in the knowledge they are receiving from the other members, particularly with regards to evaluating suggested solutions or opinions. This point of confidence also has a bearing on what makes a CoP different from a team because confidence is closely entwined with reputation. As relationships evolve, both interpersonally and virtually, and confidence in the member grows, their reputation in the CoP improves.

3. COMITÉ NATIONAL DE DÉVELOPPEMENT DES RESSOURCES HUMAINES DE LA FRANCOPHONIE CANADIENNE/NATIONAL COMMITTEE FOR CANADIAN FRANCOPHONE HUMAN RESOURCE DEVELOPMENT – A VIRTUAL COMMUNITY OF PRACTICE

One of the testbeds for this research is the Comité national de développement des ressources humaines de la francophonie canadienne (CNDRHFC), which was founded three years ago with a mandate, including but not limited to addressing the digital divide that leaves the Acadian and francophone communities outside of Quebec disadvantaged when it comes to sustainable regional development.

The CNDRHFC's mandate is to provide a means by which community economic development and employability representatives of the Acadian and Francophone communities can elaborate development strategies and policies in the areas of regional economic development and human resources planning. The Committee is also mandated to issue recommendations on a regular basis to the various parties involved;

- the governments,
- the communities;
- employers; and
- institutions.

The goal is to establish a master plan that can promote the development of the Francophone and Acadian communities while reflecting their particular characteristics (CNDRHFC Master Plan, 1998).

Over 100 agents are tasked with coordinating regional plans for the community, mobilizing them to promote economic development in such areas as tourism, youth initiatives, rural area development and the creation of a knowledge-based economy. Each community has representatives from each of the afore-mentioned areas. These agents are highly mobile as they serve a large number of scattered communities across Canada. As such, they constitute a virtual community linked by the information and communication technologies and a suitable candidate for the study of knowledge sharing behaviours.

4. APPROACH/METHODOLOGY

The general methodology that was used was qualitative in nature. Primarily a case study approach was used in which we acted as participant observers in various interview and workshop sessions. In this capacity we were able to extract anecdotal stories and other content, which shed light on the nature and functioning of the virtual community.

Background research was conducted to survey the state of the art of virtual communities. The goal was to identify similar initiatives and to examine the success and functioning of those communities. While there was a limited number of comparable cases, a few that we did identify include a networking program in Latin America which formed around the goal of sharing technical knowledge on wildlife management (Thelen, 1990), the Electronic Networking for Rural Asia/Pacific Projects (ENRAP) and the Sustainable Development Networking Programme in India (Nath, 1999).

The next phase of our study involved interviewing the key stakeholders in the CNDRHFC virtual community. The participants of this interview included Aubrey Cormier, Director of knowledge management and organizational learning; Gilles Vienneau, Director of research and planning and Jean-Francois Lamy, special advisor on knowledge management. Through this interview we were able to audit the past and current knowledge sharing activities of the Committee's agents. This audit helped answer questions such as basic requirements of the virtual community in terms of knowledge sharing capabilities and the methods that were typically used. In addition we were also able to ascertain the knowledge sharing objectives that the stakeholders hoped to achieve through the fostering of the virtual community.

Through this interview it was also discovered that a training needs analysis had already been done for the agents and the stakeholders can now easily identify the training gaps that need to be filled. The main conclusion was that a competency matrix for the skills set that will be needed by agency workers should be created. Socio-demographic profiling had also been done on the agents, which indicated that the majority have community development experience but that few have community economic development experience. The need for a pedagogical matrix – e.g. use of case study to impart attitudinal training and change, job support for procedural tasks etc. was also discussed as being highly desirable. The use of the community networking interactions to establish a framework for lifelong learning was advocated at this point.

Phase three involved a storytelling session in which the key stakeholders participated once again. This storytelling session allowed us to capture the history of the CNDRHFC, how it was created and how it has arrived at its current status. The context and the culture of the virtual community were discussed as well. Through this session, the many challenges that are faced by the community members within their isolated geographic locations and in terms of their virtual networking capabilities were discovered.

Finally, a workshop was held on March 22nd in Ottawa, Canada. This location was chosen because it was not only the nation's capital but also a location that was not "home" to any one of the communities and was thus a "neutral" ground. This workshop was the first time that all agents were brought together as a collective team. The workshop was held following a series of working sessions over the preceding two days. The third day workshop consisted of case-like scenarios that were used to lead participants through the major phases of their job. Techniques such as demographic/social research, scanning activities, and KM soft skills were introduced. The work focused around the five themes of social/community development, economic development, tourism, youth initiatives, rural development and the knowledge based economy and walked participants through diagnosis, strategy, planning, implementing and evaluating. All the while a parallel social networking agenda was being pursued through which participants could begin to form the interpersonal links and relationship that would support the virtual community during times of dislocation.

5. KEY FINDINGS

The CNDRHFC CoP is currently positioned in the stage of coalescence. The CNDRHFC agents have had the opportunity to come together and with the help of the community sponsors, the agents are beginning to launch a community. The agents have discovered the value of engaging in learning activities and are in fact actively requesting more knowledge objects and resources to facilitate their labour. Through the workshop it was possible to identify the initial solidification of a mutual engagement, joint enterprise and shared repertoire. The interaction between the geographically dispersed and sectorally diverse members allowed the agents to offer each other insights, adopt one another's practices, and share frustrations. An example of this was seen with the economic development agents of the North West Territories and Nunavut who shared their knowledge and experience with dealing with the emergence of economic competition. While the NWT territories have yet to see much competition, Nunavut can already identify related problems and developing factions. Following this contact and communication between these agents, when economic competition grows in NWT, that agent will know who to contact for help in managing the related challenges.

Another feature of the coalescing stage is the facilitation of dialogue about identity and joint enterprise. Two examples of this could be seen from the workshop. The first is in the history storytelling session at the beginning of the workshop in which the agents were provided with a context for their work, in many cases for the first time, which allowed them to view themselves as having a collective past and mission. Through this story and the activities of the workshop, the agents were able to identify themselves as community members of a larger team (as opposed to geographically distinct teams) and to begin understanding the culture of their broader community. This identification allows the community members to define themselves in relation to the broader organization which in turn guides their feelings, behaviours, and attitudes and helps shape their sense of shared culture (Wiesenfeld et al., 1999). This sense of shared culture and identity will facilitate knowledge sharing in the virtual setting.

The emergence of a sense of joint enterprise can be seen through the workshop activities, where group members had to work together to make decisions and resolve the task at hand. The collaboration of the geographically distinct and sectorally diverse agents on this task allowed them to see the joint enterprise between themselves and their colleagues in the community of practice.

The concept definition activity significantly helped the community understand the challenges of creating a shared repertoire and gave them a preliminary opportunity to begin working toward that end. During the concept definition task the facilitators played a significant role in helping the members come to this realization. In working towards definitions of community economic development in contrast to economic development, the agents had the opportunity to share ideas, work together and discover how difficult it is to reach a consensus on such terms. While many came to the realization that there was a significant difference between traditional economic development and community economic development, the more significant realization was the need for reaching a consensus if collaboration was going to occur in the future. This imperative, which was motivated by the agents, was based on their need for referring to the same concepts when sharing ideas or collaborating on solutions.

Throughout the mixed groups emergent leaders were easily and immediately identifiable. As is the case with community leaders, rank and position do not play a significant role. This was seen in one group in particular in which the participant with the most enthusiasm and energy, who was also one of the youngest of the group, emerged as the leader throughout many of the activities. This leader can also be viewed as a champion of the activities and likely will be a champion of the virtual community as well. In other groups, the leaders were more transitional and were contingent on areas of expertise in terms of whichever issue was immediately at hand. While participating in a particularly challenging activity, one group member, who had concrete experience in the area, was able to lead the group to fruitful resolutions, as he was able to share his experience and shed light on the realities of the fictional scenario they were working on. In this case this leader can be viewed simultaneously mentoring the group with his added experience and learning.

Other examples of mentoring were seen throughout the day. One of the most interesting observations on mentoring occurred when the older members of the community seeking new knowledge from the younger members. In one particular case, the younger community member had had experiences working with other geographically and technologically isolated communities and was able to bring insight into the Francophone situation based on this experience. In this instance, there was no reluctance on the part of the elder member to assume the role of the apprentice and seek information from the younger mentor. In fact this dialogue actually drew in a number of interested community members.

Finally, the results at the end of the day may be summarized with the following:

*“Knowing each other gave community members a greater feeling of unity and common purpose...most participants agreed that the personal relationship is essential if you are to go the extra mile for someone”
(Hildreth et al, 2000).*

6. CONCLUSIONS AND FUTURE WORK

The virtual knowledge-sharing model highlights the importance of the types of knowledge shared, the channels that are used and the relationships and participation patterns of the members. A preliminary validation of our conceptual model of virtual knowledge sharing appears to be satisfied in the case of the CNDRHFC virtual communities of practice. Through the workshops we have been able to see the emergence and development of the necessary interpersonal relationships. Through these relationships the requisite confidence and trust in the knowledge source and the shared identity with each other and the community as a whole, has begun to form. As Hildreth et al. (2000) have pointed out that “one of the most difficult parts of operating in a distributed environment may well be the facilitating of the evolution of the community and the development of the relationships”, the results of the workshop indicate that these relationships have already begun to form and that the community has begun to coalesce as a direct result of the face-to-face meeting in Ottawa.

While the challenges inherent in the lack of media rich options for virtual communities are still a concern, it has been argued that “that electronic communication is especially important as a source of commitment and involvement for more peripheral workers” (Wiesenfeld, 1999). Given the geographic isolation of the CNDRHFC CoP members these agents can collectively be viewed as peripheral workers and as such this argument will hopefully prove to be true. Further validation of our conceptual model would need to be done to confirm this argument. Subsequent research should be done quantitatively in which a more in depth study of the specific types of knowledge that is shared, the specific members’ participation patterns, the specific communication channels used and their media richness are statistically measured and analyzed. Social interaction networks can be used to map and analyze the flow of knowledge (who was it shared with, what was shared, which channels were used, which, if any technologies were used, whether any tangible artefacts were left behind, etc.) within these communities. The efficiency and effectiveness of the knowledge network will be measured in terms of the impact on innovation for de-marginalization.

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