

# COMMUNITIES OF PRACTICE: WHAT ARE THE CONDITIONS FOR IMPLEMENTATION IN A VIRTUAL MULTI-ORGANIZATION COMMUNITY?\*

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## ABSTRACT

Communities of practice have raised more and more interest over recent years. In this paper, we present a case study of a virtual community of practice (CoP), that is one where participants work from a distance, a situation which has not been studied as often as the communities which work in the same environment. This virtual CoP includes participants from different organizations, and we will determine if the preconditions for implementation are the same as what is documented in the literature on communities of practice. The research was conducted under the auspices of the CEFRIO (Centre francophone pour l'informatisation des organisations), in 2000-2001. Our data identifies some conditions of success for a virtual multi-organization community of practice, i.e. animation, engagement of participants, and time, something participants lacked here. Most participated quite actively in the community, but some learnt more than they contributed, indicating that there was a certain periphery of participants somewhat less engaged than others. The fact that most do not work with computers and that they had to learn a new software surely explains part of this, although level of participation and motivation was nevertheless quite high. The health sector is under challenge in many countries, Brazil as others, and this case study may be instructive of new ways of developing competencies in the health sector.

\* This research was conducted under the aegis of the Cefrio ([www.cefrio.qc.ca](http://www.cefrio.qc.ca)). It was conducted in partnership with colleagues from Université Laval (T.Laferrière), Université de Montréal (M. Campos) and HEC Montréal (C. Bareil, A.Bourhis, L. Dubé, and R.Jacob; see Jacob et al., 2003, for information on the project's participants). The organisational and HRM part of the research was conducted with Anne Bourhis, from HEC Montréal; we wish to thank Mireille Gaudreau, research assistant, for her excellent work on the statistics and Anne Bourhis for her cooperation in the organisational part of the project.

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## COMMUNITIES OF PRACTICE

Communities of practice have raised more and more interest over recent years. In this paper, we will present a case study of a virtual community of practice (CoP), that is one where participants work from a distance, a situation which has not been studied as often as the communities which work in the same environment. One exception to this is Benoit and Laferrière's case study (2000) and surely, more documentation of cases of virtual CoPs needs to be done. Our case is different from that of Benoit and Laferrière's since participants not only work from a distance, but they also are not employed by the same organization, which increases the challenge of implementation of a CoP. In this paper, we will thus present the case study of a virtual CoP with participants from different organizations, and try to see if the preconditions for implementation are the same as what is documented in the literature on communities of practice.

We will first present the definition and meaning of the concept of communities of practice (CoP), and recall the elements highlighted by other researchers as conditions of success and for these communities of practice (CoP), based on our literature review, before we present our case study of a virtual community of practice in the health sector, highlighting data which permit a certain test of conditions of success for a virtual multi-organization community of practice.

First, let us recall that the term « communities of practice » was first used by Wenger and Lave some 13 years ago (Wenger and Lave, 1991). Many different views and definitions have been presented since then, but most, if not all refer to the importance of sharing information within a small group, as well as the value of informal learning for a group and for an organization as a whole. A few definitions of communities of practice which are close to the one we used are presented in Mitchell (2002) :

- communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis (Wenger, McDermott & Snyder, 2002, p. 4, quoted in Mitchell, 2002 p. 12)
- a group whose members regularly engage in sharing and learning, based on their common interests (Lesser & Stork, 2001, p. 831, quoted in Mitchell, 2002 p. 12)

The main elements stressed here are the sharing of a concern, a set of problems, the ongoing interaction between the group, the ongoing sharing and learning. As we will see later, these elements were found in our community and contributed to its success.

However, as we will see later, the virtual community of practice studied here, is further from some other, maybe more conventional definitions of communities of practice, which refer to a more informal group, whereas the dozen of communities we studied, and the one which is the object of the case study presented here, are structured by an organization and much more formal. Let us nevertheless recall these other definitions, in order to highlight difference in types of communities, which may also raise questions relatively to the conditions of success. Here are a few other definitions:

- groups of people informally bound together by shared expertise and passion for a joint enterprise (Wenger and Snyder, 2000, p. 139);
- informal clusters and networks of employees who work together – sharing knowledge, solving common problems and exchanging insights, stories and frustrations (Lesser & Prusak, in Lesser et al., 2000, p. 831, quoted in Mitchell, 2002, pp. 11-12).

It must be mentioned that the community we studied was not based on a previously existing *informal* group, nor was it composed of people who worked in the same workplace, for the same employer, which is rather uncommon in the literature to this date. However, over recent years, organizations have shown

interest in workteams that work from a distance, although sharing a project, and it is this that caught our interest for communities of practice working from a distance as well as for different employers.

It must however be stressed that these virtual communities of practice are more than simple teams working from a distance. They are seen as a group that has a common mission, that has a common task and must deliver a product based on the regular exchanges and information sharing within the group, as defined in McDermott (1999). Work teams usually have a predetermined goal and schedule, often very clearly defined tasks and their activity is usually centered on their work tasks, and done during working hours; often, work teams disintegrate once the objective is attained, but in the manufacturing sector, they often remain to assume general work tasks collectively (Tremblay and Rolland, 1998). Also, work teams are often characterized by a strong division of labour, whereas communities imply more direct cooperation between the members (Tremblay, Rolland and Davel, 2000). Communities of practice are seen as having wider and less defined objectives, as not having a specific schedule and dates for attaining the various objectives (contrarily to work tasks), and usually go on for quite some time (indeterminate often).

As indicated in much of the literature on work teams as well as communities of practice, working « together » as a group usually requires some prerequisites, the main precondition appearing to be trust in other members of the group. This is all the more important in a context of communities of practice, since members of the community are expected to share tacit knowledge, to construct collectively new knowledge and possibly new products or services (McDermott, 1999, 2001, Wenger and Snyder, 2000; Adams and Freeman, 2000; Deloitte Research, 2001). It is precisely because of this trust element that many authors recommend that virtual communities of practice be developed on the basis of existing informal groups, groups that share values and already trust each other. This is however often not possible in firms and it is why many virtual communities of practice are designed without being based on a previously existing informal work group, as we will see. This of course represents an additional challenge for CoPs, that is when previous acquaintance and trust of members has to be developed within the CoP, all the more so when it is a virtual CoP.

Amongst the other main prerequisites often mentioned in the Communities of practice literature (as well as in much of the teamwork literature – Tremblay, Rolland and Davel, 2000; Tremblay and Rolland, 2000), are the importance of the leader or animator of the community, the interest and motivation of individuals to work together as a group, and the support received from the organization : support and legitimization of the group on the part of the immediate superior or higher levels of hierarchy, financial or non monetary rewards for the participants and the like (Wenger, McDermott & Snyder, 2002). Available technology and technological support are sometimes mentioned, but most research seems to indicate that the human resources and organizational challenges are more important and that technology plays a more limited role in the success or failure of Communities of practice.

Some elements of the teamwork literature also appear useful in our consideration of conditions for successful implementation of CoPs and collaboration within them.

According to Letize and Donovan (1990), the leader must proceed through a succession of four functions in order for the team to succeed and in our view, these elements could be transposed to the context of CoPs and organizational learning. At first, he must consolidate the team (leader, trainer and expert roles). He must then, as an animator and facilitator, oversee the development of the skills of the individuals who make up the group. At the next stage, he puts more emphasis on the management of the team's performance (role of auditor and buffer to protect the team from external attacks). Finally, the supervisor plays the role of external consultant to various teams to help them reach their goals (advisor role).

Roy (1999) identifies three types of supervision that form a kind of continuum of team autonomy. When teamwork is first adopted, the role of supervisor tends to change. The supervisor becomes a facilitator, a resource person or coordinator who helps the team to assume its new responsibilities. A team member may then be chosen as team leader to coordinate and represent the team. He may report to a senior manager or a coordinator who supervises a number of teams. Finally, some firms have chosen to distribute management responsibilities among team members. In this case, each team member so designated becomes the team's reference person for the particular matter for which he is responsible.

Contemporary authors recognize the determining influence of the organizational context on the involvement and effectiveness of teams (Guzzo and Shea, 1992; Sundstrom, De Meuse and Futrell, 1990; Hackman, 1987; Goodman, Ravlin and Argote, 1986; Gladstein, 1984; Nieva, Fleishman and Reick, 1978). Several dimensions of the organizational context are considered – technology, human resource management policy (Shea and Guzzo, 1987a; Hackman, 1987); and the support and involvement of management and the organizational structure (Gladstein, 1984). We have tested many of these dimensions in our analysis of CoPs and the results concerning the animation roles will be presented further on; we will see that they confirm some elements of the teamwork literature.

Having summarized the essence of the literature on preconditions for implementation of communities of practice which is pertinent for our purpose here, let us go on to the case study of a Canadian community of practice.

## ORGANIZATIONAL LEARNING

Organizational learning is one of the reasons firms and organizations implement communities of practice. OL can be defined as a collective phenomenon of acquisition and development of knowledge, which transforms the management of situations and situations themselves. The collective dimension of organization can be activated by the circulation and diffusion of new knowledge and by the development of relations between existing competencies.

Duncan et Weiss (1978) define the organization as a group of individuals who engage in coordinated and transform directly or indirectly a series of inputs and outputs.<sup>1</sup> The organization is thus a system of *purposeful actions* according to Duncan and Weiss (1978). The organisational efficiency is thus determined by the quality of knowledge available. Beyond individual learning, which brings about changes in individuals, organizational learning can translate into changes of another nature, and at another level. In our case study however, the information sharing happens between individuals from different employer organizations, so that the organizational learning can take place in the professional organization, but less at the level of the employer organization, as we will see.

## A CASE STUDY OF COMMUNITY OF PRACTICE IN THE HEALTH SECTOR

The case study we will present here is one of about a dozen communities that were fostered by the Centre francophone d'informatisation des organisations (CEFRIO), an innovation and transfer research center that supports these communities; the health sector community is the first to be finished and evaluated (although communities should not be considered as « finished » , it is the case here, as we will explain further).

<sup>1</sup> Duncan R. and Weiss A., 1979, *Organizational Learning: Implications for Organizational Design*, in *Research in Organizational Behavior*, eds. Staw B.M. and Cummings L.L., Vol. 1, pp75-123.

The research project initiated by CEFRIO started in 2000 and aimed at the establishment of some 20 Communities. To this day, 10 to 12 communities can be considered active, although many are quite recent (2001-2002), since most took more time to implement than had been planned. This may be due to the fact that the concept was new in many organizations, and also that no informal group existed to receive the community of practice project in many organizations. Thus, the steps leading to implementation took a little more time than seems to be indicated in the literature, although no definite time frame is mentioned as normal in most case studies.

The objective was to create communities in organizations that wanted to develop such a form of knowledge management, but also to do research on the implementation, conditions of success, impacts of the communities, as well as on interests in participation and levels of satisfaction of participants, amongst other elements. The research was conducted by a team of researchers from four universities, studying different dimensions of the communities (communications, technology, construction of knowledge and organizational-human resources management dimensions, the latter being our own object of analysis). In order for this research to go forward, participant organizations had to accept that the participants respond to some 8 questionnaires, designed to be completed on the web and guaranteeing anonymity to all respondents.

## METHODOLOGY

The various participants in the community were not directly observed by researchers, although there were secondary sources of information: information meetings, focus groups which researchers animated and where participants were present, critical incidents documentation by a research assistant, to which researchers had access, and finally and mainly a series of online questionnaires filled by participants. The questionnaires cover the four dimensions mentioned earlier, and for the organizational-HRM dimensions that refers to the following : objective of the organization in setting up a community, as perceived by participants; past work experience and past experiences of cooperation; perception of participants as regards the community experience; objectives attained; satisfaction and general evaluation. There were two questionnaires on organizational and human resources management (HRM) dimensions : one at the beginning and another at the end of the experience, in this case after 6 months of participation. Besides the questionnaires, some focus groups were conducted with animators of the communities and some « critical incidents reports » were drawn up in order to have a better follow-up on all cases.

The case we present here is particularly interesting because contrarily to many communities of practice, the majority of those documented at least, it does not rest on participants from one employer organization, as mentioned previously. It is based on a group of health workers specialized in heart diseases and health, living in different cities across Canada, that have contacts only through the internet and email. The organization responsible for the project is actually a professional association in the health sector.

With reference to preconditions of success, this is thus an interesting case, since there is no direct management support, little facilitation and no financial incentives offered by the employer directly, as we will see, while these elements are considered essential by much of the literature (Mitchell, 2002). However, as we will also observe further on, the motivation of participants was very high, and the case is considered a definite success, as data from participants indicate.

Let us add that 21 female health workers participated in this community of practice; we cannot give more details on the specific organization or profession because of confidentiality requirements, but let us say that they are

all from the same professional category, but different employer organizations and most have been working for over 10 years. Their objective was to develop a website that was to be filled with information on heart health and heart diseases. In this sense, they had a definite objective and not so much a general perspective of learning as is sometimes the case in communities of practice. This determined the type of exchanges between participants: they mainly exchanged information to be included in the website, opinions and advice on how to present the information on the website, information and opinions on alternative treatment of heart disease and problems. The community was animated by one animator, and she was very active in her work; she is the only person who had time paid to participate in the community, in fact to animate it. The success of this community is partly due to the fact that the animator did not change and was very dynamic, contrary to what happened in other cases. The emails of the animator and participants were generally sent to all, then organized and classified on a special site for information exchange and retrieval. The exchanges were limited to issues to do with the information to be put on the website on heart health and diseases and did therefore not cover issues of more urgency, although this may be considered in future applications. The objective of this first experiment was to develop competencies in collaboration and information sharing, and most feel this has been attained. Although part of these competencies can be transferred into the regular workplace of the participants, the community of practice dealt with an issue outside of work activity of the participants, so there were no questions concerning impact on performance at work after the experience.

Let us now turn to the more detailed analysis of this case and the results we collected through the web survey.

#### ATTAINMENT OF OBJECTIVES

We will first look at the evaluation of the participants concerning the attainment of objectives of the community, then at some of the elements that have been identified as preconditions for the success or failure (i.e. group dynamics and learning).

As concerns the objectives, all those who responded to the questions relative to the objectives agree that these objectives were attained. The main objective of the community was, as mentioned, to create a website which would contain information on heart diseases and heart health. All 21 participants agree that this objective was attained.

However, as various objectives of communities of practice were identified in the literature on communities (McDermott, 1999, 2000, 2002, Mitchell, 2002, etc.) as well as on teamwork (Tremblay, Rolland and Davel, 2000; Davel et al., 2001) and on collaborative work (Deschênes; Henri and Lundgren, 2000), we wanted to know to what extent these general objectives of communities of practice and of collaborative work or teamwork might have been attained before we go on to explain the conditions which might explain attainment of objectives.

It is interesting to note that the sharing of information and knowledge comes first, followed by the experimentation of a new mode of resolution of problems and a better utilisation of delocalized resources. On a more general note, they also consider that the virtual community project favours excellence, and stimulates creativity and innovation.

**Table 1 - Level of Attainment of Strategic or  
Operational Objectives**

	<b>Average score<sup>(1)</sup></b>
Foster innovation (ex : knowledge sharing in order to develop new ideas for better products, services, practices, processes)	4,14
Better relation with client (ex : reduce response time)	3,64
Better quality (ex : better reliability in service)	3,78
Foster excellence (ex : list of best practices)	4,19
Rationalization (reduce costs)	3,33
Foster competencies development	3,75
Efficiency (ex : do more with less resources)	3,80
Facilitate exchange and sharing of information and knowledge	4,48
Experiment a new approach of problems	4,24
Better use of delocalized resources (ex : other city, other region)	4,15
Reduce number of workers	2,83
Maximize working time (ex : increase productivity, reduce waste of time)	3,19
Reduce duplication (ex : not reinvent the wheel, no repetition)	3,94
Stimulate creativity	4,20
Foster learning	4,33

<sup>1</sup> Question : Indicate to what extent, in your opinion, these objectives were attained in your community of practice. Scores are from 1 to 5 , where 5 indicates the objective was fully attained.

Some more detailed data on participation in the community and other elements will help us understand what were the preconditions for these various objectives to be attained. This will permit a test of the general preconditions for CoPs in a virtual context, since most were derived from literature on non virtual communities of practice, as well as partly from literature on collaboration (Henri and Lundgren, 2000), and on teamwork (Tremblay, Rolland and Davel, 2000)<sup>2</sup>.

## PARTICIPATION IN THE COMMUNITY OF PRACTICE

### INDIVIDUAL PARTICIPATION

The health workers have a very positive view on their participation in the community of practice. We wanted to know whether this participation was beneficial from a personal or professional point of view and we wanted to know if they felt they had learned from others and to what extent they had themselves contributed to the community. This is important since literature on teamwork and group activities often indicates that a few leaders participate in the project (a hardcore of a few participants) while many others remain in the periphery. In

<sup>2</sup> This is the first of a number of case studies, and it is all the more interesting since response rate is high amongst participants, although the number of participants was limited (21).

the case of a virtual community, where participants are not face to face, it is all the more easy to just sit in or read messages, without fully participating in the community. However, participation of a large number is essential to really implement a community of practice and consider it a success. The data does indicate a higher level of learning from the community (5,24) and of professional and personal enrichment (5,95 and 6,10), than a level of contribution to the community (4,29). In the focus group, it was mentioned that these health workers do not have computers accessible easily in their work environment, they don't use computers frequently, and the data do indicate that their participation was usually outside of working hours. This made it more difficult for some to participate and feel comfortable in contributing to the group's project. This may explain that a certain number learnt from the experience and exchanges, but may not have contributed as much as could be hoped for or expected. Also, the 6 month limit imposed on this CoP may also explain that some may not have had enough time to really get used to the technology and the group and to feel comfortable in participating. Time constraints may also be important, as we will see further on.

**Table 2 - Evaluation of Various Dimensions of Participation**

	<b>Average <sup>(1)</sup></b>
I found my participation in the CoP enriching personally	6,10
I found my participation in the CoP enriching professionally	5,95
I personally <b>contributed</b> a lot to the CoP	4,29
I personally <b>learnt</b> a lot from the CoP	5,24
I am personally very <b>satisfied</b> of my participation in the CoP	4,57
I would be <b>interested to continue</b> to participate in a CoP	5,62

<sup>1</sup> Question : What is your global evaluation of your participation in the CoP? Scores from 1 to 7 where 7 indicates that the respondent is totally in agreement with the proposition.

Nevertheless, there is a relatively high level of participation and a high interest in continuing to participate in such a project (5,62), which is interesting, since to our knowledge, there has been no study of virtual communities in professional associations, or at least none documented. Clearly, the participants feel they learnt a lot from the experience on a professional and personal level and this can surely be interesting from the point of view of competence and knowledge development in professional associations or orders, which often seek for new ways of developing competencies within their membership.

## DYNAMICS OF THE GROUP

Having worked previously on teamwork (Tremblay and Rolland, 1998, Tremblay, Rolland and Davel, 2000), and having observed in the literature on teamwork as well as on communities of practice (Mitchell, 2002, Wenger, 1999) that trust is essential in participation in group tasks or activities, it appeared important to evaluate the relations within the group to understand if this dimension is as important in a virtual community and how things play out in such an environment. Respondents indicate that a positive relation and interaction within the group was maintained throughout the project, which lasted 6 months. Information sharing increased, which is important, since it is one of the main objectives, if not the main objective of the communities (Mitchell, 2002, Wenger, 1999, 2000). To a slightly lesser extent, participants indicate that cohesion of the group and complicity also increased over time ; since communities do not usually



have a fixed end, as this group did, this observation is interesting. However, we would probably need a longer time span to evaluate whether the interest might diminish over time and impact negatively on information sharing and cohesion. There is however a small indication of rivalries and tensions developing over time, although the participants majoritarily hold a different view. In work on collaboration and learning (Henri and Lundgren, 2000), there is indication that complicity and group cohesion are essential to learning and collaboration. It is interesting to find these elements confirmed here, all the more so in an environment characterized by distance between participants working on the same project.

**Table 3 - Evolution of Group Dynamics**

	<b>Average <sup>(1)</sup></b>
Information sharing increased over the months	5,81
Complicity between participants increased over the months	5,47
Group cohesion increased over the months	5,79
Rivalries increased over the months	2,06
Tension increased over the months	2,11

<sup>1</sup> Question : What is your global evaluation of your participation in the CoP? Scores from 1 to 7 where 7 indicates that the respondent is totally in agreement with the proposition.

As much of the litterature on communities highlights the importance of the role of the leader or animator of the community as a crucial condition for implementation of CoPs, this dimension was also considered in the survey, and we now turn to this.

## ANIMATION ROLES

The animation role is all the more important in a virtual community of practice, relying totally on electronic exchanges, and it is surely more challenging in this context as well. In the case studied here, all data and information collected indicates that the role of the animator was crucial. The focus group, the participant observation of one researcher as well as the survey data included here all indicate that the animator was very active and played a crucial role, if not the most crucial role, in the success of the community. While many other factors such as individual motivation and trust of other participants are surely important in this case, the absence of management support and the absence of any form of monetary or other reward in the workplace, make the role of the animator even more crucial.

It was observed that 90 % of participants were « very satisfied » and 10 % satisfied with the animator of this virtual community; also, information gathered in focus groups and various exchanges related to the research confirm that the involvement of this animator was excellent, if not exceptional. It was also observed that many other CoP projects did not go forward or took time to go forward precisely for lack of an active and motivated animator.

Given the importance of the animator or leader of the community, we investigated the roles which appear crucial, based on the litterature on CoPs. The participants were thus questioned as to the roles which they found important amongst the roles identified in the litterature and the roles which were effectively assumed by the animator of the community.

The answers reported in table 4 indicate clearly that the animator was very active (scores are all over 6 out of 7) and was active in many ways, not only concentrating on one or a few of the roles of the animation. She was dynamic, presenting new ideas and tools, leading discussions, supporting individual members, giving expertise on collaboration tools online, measuring progress and informing

members. To date, we have no survey data to compare this case to others, but focus group exchanges and participant observation of some members of the team indicate that this element is crucial, especially in a virtual community of practice. Indeed, the few communities that are very active and appear successful to date have this characteristic in common : a very dynamic animator, very motivated by the project.

**Table 4 - Roles Assumed by the Animator**

	Average <sup>(1)</sup>
Leading and animating discussions on the web	6,50
Developing interest of members for the task to be done (ex : relaunching debates, reminding of group consensus)	6,40
Being dynamic in order to boost members' participation (ex : individualized contact, working behind the scene)	6,74
Individually supporting members of the group when they have difficulties	6,61
Giving expert advice concerning collaboration tools	6,35
Measuring progress of task and informing	6,75
Boosting continuous participation in the CoP (ex : proposing new ideas, new tools)	6,70

<sup>1</sup> Question : In order for your CoP to attain its objectives, your animator was active in... Scores from 1 to 7 where 7 indicates that the respondent totally agrees with the proposition.

## ORGANIZATIONAL SUPPORT

Management and organizational support are often considered essential to implement and maintain communities of practice (Mitchell, 2002). Our case study in the health sector is interesting in this respect since few cases, if any, were documented on communities which rely on the participation of members from different employer organizations, and even more, members that have no previous knowledge of each other and have to work together from a distance.

This group thus had no organizational or management support from their employer, all the more so since in many cases the employer was not informed of the project. Four out of 21 participants received some supplementary resources : two received financial resources, one received material resources and another was given time off to participate. This is very different from other organizations, where participants often have time in their job planned for participation in the community. Here, on the contrary, management support from the employer organization is clearly limited since these employers are not involved in the project. However, the professional association which supports the project appeared to be very supportive.

As our data indicate, respondents do estimate that organizational support from the Professional Order was sufficient (5,07 out of 7). It is also interesting to note that the interest of the organization seems to have increased over time to some extent (average of 4,36 out of 7).

**Table 5 - Organizational Support**

	<b>Average<sup>(1)</sup></b>
Organizational support was sufficient	5,07
Organizational support was insufficient	3,00
Organizational support was too occasional	3,00
The interest of the organization seems to have diminished over time	2,58
The interest of the organization seems to have increased over time	4,36

<sup>1</sup> Question : In order for your CoP to attain its objectives, you consider that... Scores from 1 to 7 where 7 indicates that the respondent totally agrees with the proposition.

Since most of the literature on communities of practice refers to implementation within one organization, it is often mentioned that incentives or rewards or various forms of recognition can be important to support participation (Mitchell, 2002). This is also the case in teamwork (Tremblay and Rolland, 2000), and this led us to look at how organizations recognized the participation of members of the communities. It is interesting to note that while employers do little in terms of recognition (performance evaluation or promotion or the like), the participation seems to be recognized somewhat by colleagues or peers from the same professional category.

**Table 6 - Recognition of Participation**

	<b>Average<sup>(1)</sup></b>
My participation in the CoP was recognized in my performance evaluation	3,00
My participation in the CoP was recognized in my career progress (for exemple, promotions)	3,00
My participation in the CoP was recognized in my competence evaluation	3,14
The transfer of my learning experience in the CoP was recognized by colleagues in the same job category as I	4,92

<sup>1</sup> Question : How was your participation in the CoP recognized or how will it be recognized by your employer? Scores from 1 to 7 where 7 indicates that the respondent totally agrees with the proposition.

## CONCLUSION

Let us now present a few elements of conclusion, on the basis of elements from the literature presented in the first section of the paper and of our observations in the case study.

As mentioned in the first section, we can conclude that our case study is not of the traditional informal group that gets together in a workplace, but rather a group of people « who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis » (Wenger, McDermott & Snyder, 2002, p. 4, quoted in Mitchell, 2002 p. 12). As we saw, most participated in the community quite actively, but some learnt more than they contributed, indicating that there was a certain periphery of participants somewhat less engaged than others. The fact that most

do not work with computers and that they had to learn a new software surely explains part of this, although level of participation and motivation was nevertheless quite high.

As is indicated in the literature, the data do show that participants did share a common concern (sharing knowledge on heart diseases and health), they collectively resolved a set of problems (getting the information on the web, etc.). There was quite constant interaction, although more specific data on this was collected by a colleague specialised in communication studies. The data do indicate however that participants feel there was a regular sharing of information and especially learning from one another, since participants feel they contributed less than they learnt in general.

The informality found in many definitions is of course not characteristic of our case study or of the other communities implemented by Cefrio, since this was a voluntary process for creating such communities, generally from scratch, although some communities do rest partly on previous relations or informal groups, but not exclusively on these. We will later try to compare the cases where participants had previous knowledge of each other and those who did not, since this would also be of interest, but cannot be done until participants from other cases complete the evaluation questionnaires.

Although workgroups or teams that work from a distance have been the object of some attention over recent years, these were generally much more loosely related than a community of practice, which shares a common task and participates directly in the same specific task. Some specialists of cooperation and collaboration actually make a distinction between the two concepts in the sense that in one case there is a strong division of labour, which can also apply to international teams working from a distance, while in the other, none of the participants can go ahead without the others, implying a more direct participation in tasks by participants, as should be the case in the community of practice.

Our group did see itself as having a common mission, a common task and it did deliver a product (website on heart issues) after having had quite regular exchanges within the group, as defined in McDermott (1999). In this sense, our community was to a certain extent close to a work team, since these usually have a predetermined goal and schedule, as did our participants. Their tasks were maybe not precisely defined, but the goal was quite clear and the time limit was determined. Another similarity with the usual definition of work teams is the fact that this community did disintegrate once the objective was attained.

Communities of practice are usually seen as having wider and less defined objectives, as not having a specific schedule and dates for attaining the various objectives (contrarily to work tasks), and usually go on for quite some time (indeterminate often); this was not the case here, but it seems that the first community project has led the way to a new CoP project, based on the same community of practice concept, but with different participants. It must be recalled that the participants all worked on the community of practice project outside of their working hours, which may make it difficult to continue on for a long time. This is due to the fact that the participants in this CoP had different employers and the organization supporting the CoP was a professional association which made it difficult if not impossible for members to participate during working hours.

As indicated in much of the literature on work teams as well as communities of practice, working « together » as a group usually requires some preconditions, the main condition appearing to be trust in other participants. It is precisely because of this trust element that many authors recommend that virtual communities of practice be developed on the basis of existing informal groups, groups that share values and trust each other. Here, the participants did not know each other, but it can be hypothesized from the information on the case study that the sharing of professional values created sufficient trust and motivation for the project to go forward very smoothly.

We observed that members of the CoP shared a very positive view on their participation in the community of practice. We saw that this participation was beneficial from a personal and professional point of view and they felt they had learned from others although many may have contributed a little less to the community.

Amongst the main preconditions often mentioned in the Communities of practice literature (as well as in much of the teamwork literature), are the importance of the leader or animator of the community, the interest and motivation of individuals to work together as a group, and the support received from the organization (Wenger, McDermott & Snyder, 2002). We saw that there was little support from employers and from the organization which fostered the community, but the animator of the community clearly compensated very largely for the lack of support or recognition in other realms. This seems to indicate that for a virtual multi-organization CoP to develop, the crucial factor may well be the quality and dynamism of animation and leadership, since the individual employers of the participants are less involved, if at all. Also, the professional identity and professional recognition by members of the same professional category have surely played an important motivational role here, since participants indicate that this recognition was higher than that in their employer organization.

Group cohesion and complicity also appear to be important factors, as identified in the literature on collaborative work (Henri and Lundgren, 2000), while rivalries and tensions seem to have been limited in this CoP, which surely favored a successful implementation.

While group cohesion, complicity and dynamism of the leadership and animation are crucial factors confirmed as essential to successful implementation, and contributed to make a success of this case study, it could be recommended that virtual multi-organization CoPs should pay more attention to recognition and support within the employer environment, even if the employer is not directly involved, since this would be useful for participants and may as well provide benefits to the employer. However, let us recall that while part of the competencies developed here – cooperation and information exchange capacity – can be transferred into the regular workplace of the participants, the participants dealt with an issue outside of their work activity, so it is difficult to conclude anything on the impact on performance at work after the experience.

Considering the importance of the health sector in most countries, and considering the important challenges it has to face in terms of knowledge development and transfer, the concept of communities of practice can surely be an interesting mode of learning for this sector. While our case study looked at a professional association, it seems this mode of cooperation and learning finds strong support with health workers and it could surely be used more directly in the employer organizations, while this was not the direct object of the very novel experiment studied here.

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