Stefano Borzillo

Communities of Practice to Actively Manage Best Practices

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With a foreword by Prof. Dr. Gilbert Probst

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Foreword

Communities of Practice (CoPs) are being increasingly employed in organizations and are probably *the* knowledge management tool today. They are a truly useful knowledge-sharing, transferring and retaining tool, surpassing other intra-organizational networks such as project teams, operational teams, and purely informal networks. They also enjoy far greater success than pure IT tools employed to similar ends. The advantage is that they are based on like-minded people's face-to-face meetings, exchange of experience, discussion and development of best practices etc. on an intra-organizational level, although these activities are often informal and not supported or recognized.

As ever, practice has shown that many intra-organizational CoPs simply do not work while others are truly successful. The thesis provides the readers with some surprising insights into the nature of CoPs and the specific contributing factors.

Stefano Borzillo's meticulous research started off by examining a large variety of CoPs by means of six identified success factors. The results of Stefano's investigation revealed three types of CoPs, which he calls "innovating strategic", "operational excellence", and "social and productive space" CoPs and which may all three be present within a single organization. Another insight in this regard was that each of them is suited to fulfill different objectives and that there is no one type of CoP that is best for managing the development and transfer of practices. The latter is determined by the CoPs' objectives, which are again determined by the organizational context.

Stefano Borzillo also describes each of these CoP configurations' success factors. His research may therefore well be the beginning of an interesting insight that there are configurations of success factors associated with the different orientations and context variables in the different CoPs. This naturally offers an opportunity to identify specific guidelines, which makes the book even more interesting, as studies offering guidelines refer to CoPs in general and mostly specifically refer to inter-organizational and not intra-organizational CoPs.

It was only through a pain-staking and time consuming analysis that Stefano Borzillo was able to get the heart of the matter and identify each type of CoP's configuration of success factors, each of which he describes in detail and illustrates by means of one exemplary case study from Siemens, Oracle and the United Nations respectively. These case studies are no small matter as they, as well as the list of examined CoPs, are ample proof of Stefano's wide knowledge of and familiarity with the most prestigious, globe-spanning intra-organizational communities of practice. They in turn illustrate how appropriate this book is in the current business climate.

However, because eight of the CoPs that Stefano Borzillo examined were unsuccessful, he could prove his point by pointing out that they lacked the configuration of success factors that he had identified for his classification of the three different CoP types. This too contributes to formulating guidelines for intra-organizational CoPs. Theory says that they may mostly self-organize spontaneously, but through his study results Stefano Borzillo proves that they rather need to be guided by clear objectives.

This book definitely provides new insights into and a broader understanding of intra-organizational CoPs and how they can be guided towards success factors. It is a measure of Stefano's skill that despite the high academic standard, the book is easy to understand and read, making it infinitely suitable for managers and students.

Prof. Dr. Gilbert Probst

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Furthermore, I would like to thank the other members of my dissertation committee, Prof. Bernard Morard from the HEC of the University of Geneva, Prof. Jean-Michel Bonvin from HES-SO and Dr. Walter Baumgartner from Holcim Group Support, for their valuable critical comments, their advice, their reflexions, as well as for serving on my committee.

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Stefano Borzillo

Table of contents

List of Figures

List of Tables

I) Introduction

This thesis is focused on the research question: *How to successfully manage communities of practice (intra- and inter-organizational networked structures of practitioners)? Or, more precisely: Are there configurations of success factors that lead communities of practice to actively develop and share best practices across organizational units?*

The research objective is to understand the mechanisms of each configuration, and to use research findings to complete an initial research model – i.e. gain a deeper understanding of the impact of a set of success factors on the development and sharing of best practices. In the following, the term *best practice* will be defined, after which the link between best practices and communities of practice is justified.

Ken Derr, a previous chairman and CEO of Chevron Corporation, kept on telling his employees, "To share and to use *best practices* is the most important thing you can do!". Theoretically, a best practice is a practice which has shown to produce superior results, has been selected by means of a systematic process, has been judged to be exemplary, better than other practices, and whose success has been proved (American Productivity & Quality Center 1999). The critical questions that managers should first ask themselves are: "What does *best* really mean? How are best practices differentiated from good or ordinary practices? How does a practice become a *best* practice? What are the barriers that need to be overcome in order to sustain the sharing of best practices? Can critical success factors be identified to reap the benefits of such knowledge sharing?" (Gibbert/Krause, 2000, in Davenport/Probst, 2000: 91). Answering these preliminary questions requires the understanding that for a *good* practice to become a *best* practice, it should be adapted to (1) the company's objectives, (2) the market conditions, (3) the corporate culture, and (4) the culture within the different groups in the company (Probst, et al., 2003). In other words, only when a company takes these variables into account can it create a starting point for its practice to become a best practice.

The next step is to discover what the difficulties involved in measuring “best” are. It should be underlined that it is extremely difficult, or at least very cost-intensive, to measure the contribution that any one specific procedure or action contributes to a business’s success. This makes assessing what is “best” even more difficult. (Gibbert/Krause, 2000, in Davenport/Probst, 2000: 91).

After the above step, the subsequent logical step is to answer the question that Gibbert and Krause ask themselves: How to ensure that a best practice truly remains best? They develop the understanding that the delineation of best practice is achieved on an ongoing basis “through constant negotiation and re-negotiation of what constitutes “best” on all levels of the company”.

The identification and transfer of best practices emerges as one of the major problems that management faces (Szulanski, 1996). The utilization of best practices is of particular interest for companies, as they allow companies to reduce costs considerably, to gain time, as well as to enhance the quality of production processes, also at a managerial level (Bogan/English, 1994). Thanks to their creation and transfer, these best practices serve as a vector according to which know-how can be distributed within the enterprise, thus allowing the deployment of superior results elsewhere in the organization (Bogan/English, 1994). In fact, the transfer of best practices requires that best practices be identified, learned, and applied in new configurations, or new parts of the company (Jarrar/Zairi, 2000).

In the framework of the present thesis, it must be specified that the term best practice means knowledge – tacit or explicit – since a practice *is* knowledge, and, more precisely, it is *know-how* (O’Dell/Grayson, 1998). Von Hippel (1988) offers a definition of know-how as “the accumulated practical skills or expertise that allows one to do something smoothly and efficiently”. The crucial word here is “accumulated”, implying that know-how must be learned and acquired. In Senge’s view (2003), “knowledge is capacity for action”. The reader should therefore understand that when the term *knowledge* is used - as in *knowledge creation*, *knowledge development*, *knowledge transfer*, or *knowledge sharing* (Probst et al, 1999) - in the context of this work, one can, by extension, also apply what is being assessed to best practices – to their development or sharing (or transfer).

One of the major challenges for managers is to “freeze” the knowledge within these practices into knowledge bases, or into the minds of the people within the organization (Wenger et al., 2002) so that it can be used and transferred by and to other members of the company (Szulanski, 1996).

At this point, the distinction between the two types of knowledge – *explicit knowledge* and *tacit knowledge* – as suggested by Polanyi (1966) should be clarified. Referring to Polanyi’s work (1966), Nonaka (1994) states that, explicit knowledge refers to knowledge that is “transmittable in formal, systematic language”. He adds that explicit knowledge represents the tip of the iceberg of an entire body of knowledge; whereas, tacit knowledge has “a personal quality, which makes it hard to formalize and communicate”. For Nonaka (1994), tacit knowledge is deeply rooted in action, commitment, and involvement in a specific context, and “involves both cognitive and technical elements”.

According to Szulanski (1996) and O’Dell/Grayson (1998), several major problems related to the transfer of best practices persist:

First, the members of the organization often possess knowledge but do not know how this can be applied, or a practice can be utilized; hence, it is difficult for the holder of this particular knowledge to transfer it to a receiver, if he is unaware that he has it. Second, a best practice can be present within an organization without its potential receivers being aware of its existence, knowing where to find it, or knowing how to look for it. Third, tacit knowledge – knowledge resulting from experience and intuition – accounts for 80% of the real-value knowledge which is contained in a practice. Since this type of knowledge is very difficult to express and to codify, that which has true value usually remains with the transmitter, and the receiver often only gets 20% of this valuable knowledge in a codified form. Fourth, even if the transfer of a best practice takes place, it is sometimes difficult to sustain the use of this practice in the long run – either through a lack of motivation, interest, training, leadership, or connections between the members etc. In practice, there really is a risk of the loss of know-how during tacit knowledge’s conversion into explicit knowledge. There is as yet no well-established procedure to actively manage best practices within the organization.

These four points are related to the initial research question that suggests that the organizational structure of *communities of practice (CoP)* is well suited to actively manage best practices, and therefore to overcome the problems explained above. Indeed, to solve problems (1) and (2) regarding the knowledge related to a best practice, i.e. to get to the point where we "know what we know", O'Dell/Grayson (1998) suggest building *communities of practice* – networks of practitioners who come from different organizational units within the company and from its different geographical sites – in order to allow the members to continuously exchange their knowledge linked to practices. Theoretically, a CoP can be defined as a group of employees who share a common interest in a particular subject, and who share information and knowledge across the boundaries of the organization, with a motivation to develop new knowledge and best practices (Wenger et al., 2002).

Being in a close and continuous relationship with one another, members of a CoP maximize their chances of being constantly aware of their specific knowledge that is attached to the practices that they develop together. They ensure that this knowledge crosses the organization's borders both informally and formally, and, above all, flexibly. Hence, it should be possible for CoP members to ensure that knowledge related to a practice isn't "lost" in a company, and they should know where to find it in order to apply it to a practice. It is therefore presumed that CoPs are an adequate organizational structure for preserving precious know-how related to best practices – "stored" in the members' minds - during their development and their sharing within the organization.

Since the motivation for and eagerness to defend the initial research question has now been clarified, the literature review that follows begins with a discussion of *organizational learning*. This prepares the foundation for an analysis of knowledge development and sharing within CoPs, "which is an organizational structure that leads to a fast learning organization" (Wenger et al., 2002).

II) Literature review

The analysis is segmented into four essential debates: II.1) Organizational learning, II.2) Development of best practices, II.3) Sharing best practices, and II.4) Communities of practice, which are all interlinked.

II.1 Organizational learning

II.1.1) Providing definitions and links

According to Garvin (1993), a learning organization is an organization skilled at creating, acquiring, and sharing (or transferring) knowledge, and at "modifying its behavior to reflect new knowledge and insights". Consequently, according to this definition, learning within the organization is the basis for knowledge creation, and by extension for knowledge sharing[1]. Anticipating section, II.3), on the sharing of knowledge and best practices, O'Dell/Grayson (1998) observe that sharing of knowledge is a "tangible evidence of a learning organization – one that can analyze, reflect, learn, and change based on experience". This statement establishes a first link between knowledge sharing and the learning organization.

Garvin (1993), for instance, maintains that a learning organization is skilled at five main activities: systematic problem solving, experimentation with new approaches, learning from their own experience and past history, learning from the experiences and best practices of others, and transferring knowledge quickly and efficiently throughout the organization. These statements strongly suggest that knowledge manipulation occurs during the organizational learning process. In other words, knowledge manipulation can be considered an integral part of organizational learning. The author's perception is also influenced by Fiol/Lyles' (1985) interpretation of the works of Argyris/Schön (1978) and Hedberg (1981) who defined organizational

[1] In the framework of this thesis, the concept of knowledge sharing should be understood as multilateral knowledge transfers that occur between two or more organizational units; whereas knowledge transfers should be understood as unilateral, from one organizational unit to another. BY ANALOGY, the same applies to best practice sharing and best practice transfer. From an organizational global perspective, best practice transfers are included in best practice sharing.

learning as “new insights or knowledge”. The author’s view also emerges from Fiol/Lyles’ (1985) interpretation of Simon’s (1969) definition of organizational learning, which harbors the view that “learning…comprises a change in states of knowledge”. Knowledge creation can be more specifically associated with organizational learning by referring to Probst/Büchel’s (1997) definition of organizational learning: “the process by which the organization’s knowledge and value base changes, leading to improved problem-solving ability and capacity for action”. This implies that learning is a continuous process which aim is to substitute old knowledge with new knowledge, therefore suggesting that the organization is in a constant process of knowledge manipulation, which eventually leads to knowledge creation. Duncan/Weiss (1979) claim that “organizational learning is the process within the organization by which knowledge is developed”, suggesting that knowledge creation is a natural consequence of learning.

II.1.2) From “individual” to “organizational” learning

There is a perspective, based on the organization itself (Cyert/March, 1963; Fiol/Lyles, 1985; Levitt/March, 1988; Huber, 1991), that focuses on changes within the organization. In this perspective, learning experiences are collected and standardized in rules, standard operating procedures, artefacts or systems (Büchel/Probst, 2000; Cohen/Bacdayan, 1994; Pentland/Rueter, 1994).

There are also approaches that focus on *cognitive processes* as key determinants of individual learning (Bandura, 1986). These approaches mainly analyze the change in individuals’ state of knowledge instead of concentrating on the change in behavior. A change in the state of knowledge creates a potential to change individuals’ behavior through their cognitive interactions with their environment. This allows them to build their own representations of reality (environment), based on their experiences, beliefs and expectations, and on previously developed cognitive patterns (Büchel/Probst, 2000). In this *individual learning* approach, it can be ascertained that individual learning potential is a function of individual insight and cognitive abilities, as well as experience.

According to Kim (1993), organizational learning differs from individual learning in the sense that it involves the needs, motives and values of various members of the

organization. Francis' (1997) distinction between the two suggests that organizational learning should be viewed as "multiple individuals learning together". In the author's view, this statement only provides the framework for what other scholars have maintained. The majority of scholars, however, are not satisfied with this narrow focus on individuals, because organizational learning cannot merely be considered the learning of individuals, even though an organization consists of individuals. In fact, "organizations are not primarily a collection of individuals" (Jonczyk, 2001).

A first link between individual and organizational learning is rooted in the work of Argyris/Schön (1978), who suggest that organizational learning is not simply individuals learning: organizations actually learn via the *actions* and *experiences* of its individuals. Adding to this suggestion, Kim (1983) states that "organizational learning does not involve all learning by all individuals", while Jones (1995) furthermore claims that "organizations can learn independently from whatever individual, but not of all individuals". According to Jonczyk (2001), these statements therefore imply that that individual learning is a necessary, but insufficient, condition for organizational learning to occur. This means that there are other elements that allow an organization to learn, and which are not directly dependent on individual learning. According to Jonczyk (2001), these elements are "shared interpretation" and "institutionalization". Shared interpretation means that organizational learning differs from individual learning in the sense that there is a "shared understanding of events and information" (Garavan, 1997). Referring to Nothelfer (1999), Jonczyk (2001) states that "this shared understanding and knowledge are achieved through communication, comparison and joint interpretation". Furthermore, based on the work of Srikantia/Pasmore (1996), she adds that individual reflections and insights are picked up in dialogues "during which they are discussed and adapted, finally resulting in new collective convictions". Institutionalization means that during the process previously described, "individual knowledge converts into organizational knowledge as it is exchanged and accepted by others" (Duncan/Weiss, 1979).

Whatever the approach that is adopted, the relation between learning at the organizational level and learning by individuals is not fully understood (Probst/Büchel, 1997).

A basis for the understanding of organizational and individual learning has now been established, and the next endeavor is to bridge these two notions by examining the

notion of *team-based organizational learning*. The information in this regard emerged to some extent from Jonczyk's (2001) research. Partly basing her reflections on the work of De Geus (1988), Stata (1989), and Fulmer/Gibbs/Keys (1998), she concludes that a number of authors perceive teams as bridging the gap between organizational learning and individual learning, and that they are hence the central learning component in organizations. She agrees with Spender (1996) that, at a collective level, learning emerges from the interactions between collective knowledge and individual knowledge that occur within the organization at the level of social processes. Team learning is also regarded as a *microcosm* of organizational learning (Senge, 1992). Altman/Iles (1998) (in Jonczyk, 2001) mention that teams are also considered to be a capable environment for the sharing of knowledge, dialogue and reflection, which suggests that teams are capable of allowing their members to achieve collective learning. Teams are also regarded as contributing to the development of the organization's knowledge base, since its members' variety allows an increase in the multitude of different interpretations of the same experiences (Lewitt/March, 1998). Indeed, social interactions in teams allow discussions of the team members' various perceptions, allows them to make comparisons and generate new understanding. Senge (1991) claims that most of the real work in organizations is done by teams, and not by lone individuals. He also mentions that great teams are not characterized by an absence of conflict, but rather that, conflicts become productive. He adds that the free flow of conflicting ideas "is critical for creative thinking, for discovering new solutions no one individual would have come to on his own". This last statement puts teamwork in a knowledge creation perspective, which is perfectly suited to *best practice development within communities of practice.*

The concept of team-based organizational learning is therefore explained to provide a narrower and more specific framework for the further analysis of knowledge (best practice) development and sharing within communities of practice.

This theoretical pattern is now linked to the notion of the organization's *collective memory*, which will be explained next.

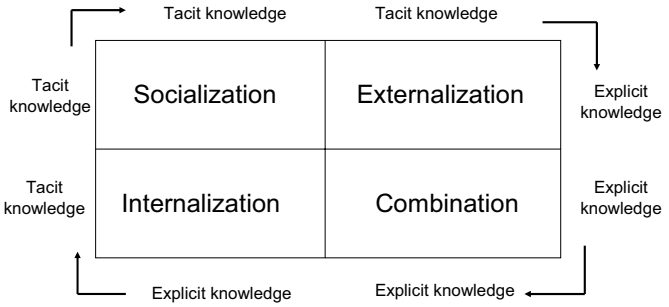
II.1.3) From Organizational learning to knowledge management

II.1.3.1) The link between organizational learning, knowledge creation, and knowledge management

Schumpeter (1934) (in Pisano, 1994) already understood that organizational learning requires the integration of new and existing knowledge. The first step is therefore to show the concrete link between organizational learning and the process of knowledge creation. This is done by doing a step-wise analysis of the knowledge creation process that takes place at the organizational level. By means of the model illustrated in Figures 1 and 2, knowledge creation is presented as a continuous process that, according to Nonaka (1994), can be subdivided.

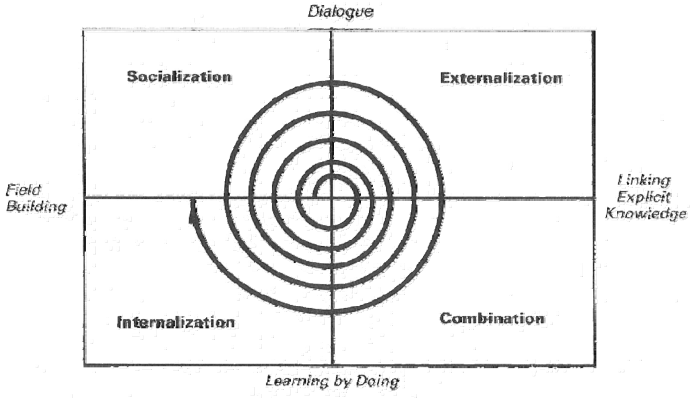
The author suggests that knowledge is created through a perpetual conversion of knowledge that the organization members exchange between themselves. This exchange of knowledge follows a "spiraling" social process: negotiating, reaching consensus and determining the *collective meaning* of the knowledge that they have generated. According to Nonaka (1995), such a knowledge-creating spiraling process occurs in groups of a limited size - 5 to 15 individuals (von Krogh et al., 2001) - although the process can also occur in a much larger group as well. Nonaka (1991) identifies the four different phases that individuals within the organization experience in the process of knowledge creation as: *socialization* (from tacit knowledge to tacit knowledge), *externalization* (from tacit to explicit), *combination* (from explicit to explicit), and *internalization* (from explicit to tacit). He maintains that knowledge creation is a spiraling process and that learning at an organizational level occurs along this spiral. Each phase represents the conversion of knowledge from tacit to explicit forms at different ontological levels:

Figure 1: Four modes of knowledge conversion



Source: in Nonaka/Takeuchi, 1995

Figure 2: Knowledge Spiral



Source: Nonaka / Takeuchi, 1995

The learning is enhanced along the spiral, implying that learning is viewed as a process that occurs while knowledge is being developed.

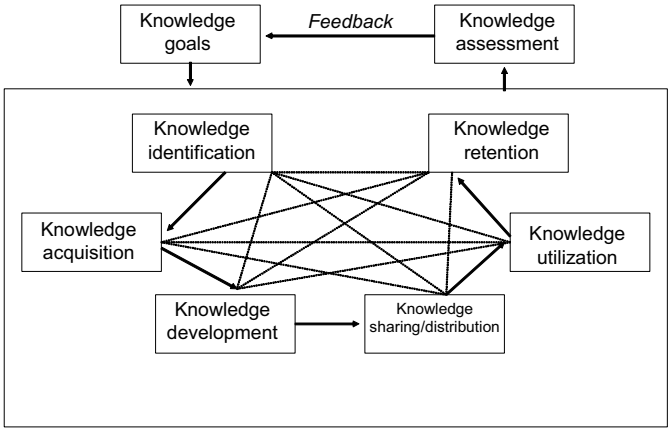
Knowledge creation and the ongoing process of learning have been given a more visual aspect by the *spiral model*. The author would now like to provide some insight into *knowledge management* as a discipline with which to actively manipulate the field of knowledge creation. The models that are presented in the following can be viewed as practical managerial tools that the practitioner can utilize in order to manage the company knowledge. The aim is to gain more practical insight that can be applied to enhance knowledge creation and sharing (or transfer) through these models.

II.1.3.2) Organizational learning and knowledge management

Garvin (1993) claims that learning that has no clear direction and purpose is not very helpful. This insight establishes a link between *organizational learning* and *knowledge management*, suggesting that that learning needs to be managed. Probst et al. (1998) define the goal of knowledge management as a practical one "to improve organizational capabilities through better use of the organization's individual and collective knowledge resources". The authors add that these resources include skills, capabilities, experience, routines, norms, and technologies.
This definition implies that knowledge management provides managers with practical solutions to canalize knowledge resources that result from the learning processes that have occurred in the organization. Garvin (1993) furthermore suggests that the organization develops a *learning plan*, setting *learning objectives* for the organization to follow that complement its business plan. The author specifies that this *learning plan* originates directly from the strategic needs and that it not only specifies those areas of knowledge that require improvement, but also the mechanisms that are used to improve learning. This points out the correlation between the *learning process* occurring in the organization and the *knowledge goals*; it also points out the development of *mechanisms* to transform this learning into *knowledge building*. According to Garvin's (1993) interpretation, these *mechanisms,* which are put in place to improve learning, can be assimilated into *knowledge management tools.* In addition, Hedlund (1994) states that "notions of knowledge and knowledge management are introduced into strategy and economics discourse, and sometimes clothed in the garb of organizational learning". These scholars therefore feel that knowledge management is embodied in the field of organizational learning.

Probst et al. (1998) adopt an *overall approach*, segmenting knowledge management activity into several blocks of action – called *knowledge blocks* – that form a framework. This framework provides practitioners with a path to follow in the management of a company's knowledge:

Figure 3: Building Blocks of Knowledge Management



Source: in Probst / Raub / Romhardt (1998)

Probst et al (1998) begin by *defining knowledge goals*, and by asking themselves how they could possibly know what they should be learning when their strategic planning contains no knowledge goals. They answer the question by maintaining that the start of knowledge management is to be found in the processes of defining the goals, as organizational learning is only truly proficient when this has been done. The idea emanating from these statements is the following: broadly, knowledge management is regarded as a discipline that allows organizations to manage their learning process's path in order to generate knowledge, to share it, and to use it. The starting point for creating knowledge is therefore for the company to decide what areas of knowledge it should develop (Probst et al., 1998). The area of knowledge management presented in the authors' *blocks of knowledge model* is very large. For the purpose of this thesis, the author of this thesis will only concentrate on the *knowledge development* and *knowledge sharing/distribution* blocks, which are relevant to the research question.

Von Krogh/Nonaka/Aben (2001) stress that in the knowledge management literature, two core processes can be distinguished: *knowledge creation* and *knowledge transfer*. This following sub-section discusses knowledge management's knowledge creation model.

Having provided insights regarding the link between *organizational learning* and *knowledge management,* this author would like to present the various knowledge management approaches to creating and sharing knowledge. This step is important, since it provides useful practical insight when analyzing the process of best practice development and sharing within communities of practice (see Chapter V).

II.1.4) The link to best practice identification and development

II.1.4.1) The notion of "best practice"

O'Dell/Grayson (1998) proposed that only those practices that produce outstanding results in a different situation and that could be adapted to another situation should be labeled "best". Basing the following statement on the work of Nelson/Winter (1982) and Kogut/Zander (1992), Szulanski (1996) states that a *practice* refers to an organization's habitual use of knowledge and that it often has a tacit component that is partly embedded in both individual skills and in collaborative social arrangements. Dooley et al. (2002) consider a *practice* a tactic or a method that has been chosen to execute a particular task, and/or to fulfill particular objectives. Membership of a project team is mentioned as an example of such a tactic or method, because it is a practice that defines how resources are organized for projects. Other authors regard a best practice as public knowledge (Matusik/Hill, 1998), or as a tactic or method that, through implementation in real-life, has proved successful (Dooley, et al., 2002). Interestingly enough, Leahy (2000) suggests that, by definition, best practices are a type of horizontal initiative and companies therefore need a cross-functional team to promote and communicate best practices throughout the organization. This statement leads directly to the research question's purpose, which is to demonstrate that the existence of CoPs in a company supports the task of promoting and communicating.

Bogan/English (1994) provide concrete examples of best practices applied to a process or a functional area that help clarify the concept: for *customer support services*, a best practice would be *the best call centre management practices*; for *distribution and logistics*, it would be *the best warehouse management practices*; for *training*, it would be *the best needs assessment process*; and for *employee development*, it would be *the best orientation practices*.

From a purely cost/effectiveness perspective, Johnston (1997) adopts a simple two-dimensional approach by suggesting a matrix of the *costs* (which he associates with *productivity*) and *processes* (which he associates with *effectiveness*) of practices that accomplish the same function. The best practices are then identified at the intersections – superior processes at low costs.

However, Bogan/English (1994), who compared practices within the same company in order to identify the "best" one, offer a "social" explanation. They discovered that *management practices*, such as *quality, safety, effective delegation, teamwork, employee involvement, and structured problem solving,* rather than specific activities or programs, were key to leveraging practices towards becoming "best" practices. Hence, building the right management team and the right management processes - and involving everyone in it - leads to a tremendous leverage of the management of other practices, which will consequently lead to their improvement (Schulz, in Bogan/English, 1994). At Microsoft, many successes and failures in the field of new product development can, for example, be attributed to human resource practices being applied (Cusumano/Shelby, 1995). Companies must find ways to constantly revise and enhance their practices to be in line with the evolution of the industry, because the intense competition currently experienced by industries means that simply meeting or beating past performance will not provide the improvement necessary to remain competitive (Harrington/Harrington, 1996). A practice has a *technical* and a *social* dimension (Probst et al, 2003). The technical dimension encompasses the "hard" aspects of the practice: typically, a process, a technology, a technique. The social dimension of a practice includes the "soft" factors that rely on human skills and experience: typically, management practices used in a specific methodology, in a training program, or during lessons learned sessions (i.e. After Action Reviews). Broadly, the *social* dimension of a best practice involves individuals evolving in a specific process or method.

In this sub-section, a more practical approach is adopted to support the reasoning and a practice is viewed as being an adoption and development of ideas turned into knowledge and transformed into technical or social forms such as, for example, processes or methods. This sub-section will not focus on the process of knowledge creation as contained in the practice, as this would be redundant in the light of the previous sub-sections. Instead, the focus will be on the identification of best practices and on their further development.

Jarrar/Zairi (2000) suggest numerous sources from which internal and external best practices can be *identified*, such as: a literature review (theory, case studies etc.); best practice resources published by various sources, such as the *American Productivity and Quality Centre (APQP)*, the *UK Department of Trade and Industry*, the *Business Intelligence Group* and the *European Centre for Total Quality Management;* resources on the internet, such as *The Benchmarking Exchange (TBE)*, *International Benchmarking Clearinghouse (IBC)*, and *EQA best practice databases;* networking at conferences and training courses; personal networks; organized benchmarking site visits; co-operation with specialized research centers and educational establishments.

Jarrar/Zairi (2000) also suggest that one of the best approaches to define what a *best practice* really is, is based on the multi-level approach that is used at the *Chevron* company that evolves through three stages: *A good idea* (unproven) which is not yet substantiated by data but makes sense intuitively, and is promising in terms of business performance. *A good practice* which can be a technique, methodology, procedure, or process that has been implemented and has improved business results for an organization (implying that it has satisfied some element in the stakeholders' needs). Finally, *a "proven" best practice*, which can be defined as a good practice that has been determined to be the best approach for many organizations as based on an analysis of the data resulting from process performance.

II.1.4.2) Best practice enhancement as an ongoing process

This author's view is that once a practice has been identified as being promising in terms of performance, it enters a *process of enhancement* until it reaches a higher level of satisfaction.
An understanding that the delineation of *best* practice can only be achieved on an ongoing basis "through constant negotiation and re-negotiation of what constitutes "best" on all levels of the company" needs to be developed (Gibbert/Krause, 2000, in Davenport/Probst, 2000: 89). The challenge for managers is therefore to focus on the enhancement of these good practices to validate them as best practices, or to elevate a commonly regarded best practice to an even-better practice. A best practice is not static, but should constantly evolve over time, aspiring to become an even-better practice.
O'Dell/Grayson (1998) admit that identifying what is "best" is a difficult undertaking because "best" is often both a moving target and situation specific.

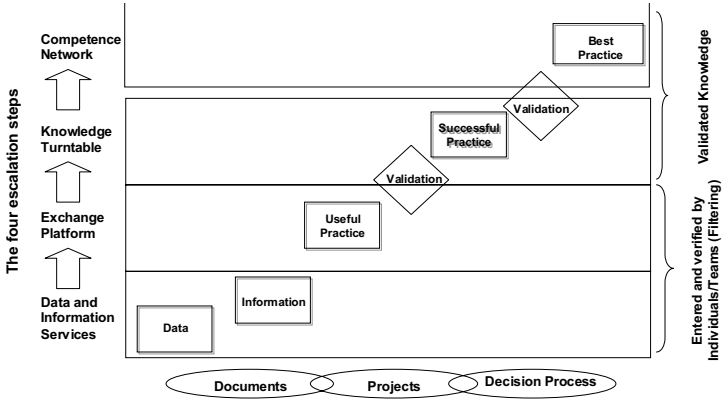
The question, of course, is how to measure and define what "best" really is. 'It is extremely difficult, or at least very cost-intensive, to measure the contribution that any one specific procedure or action makes to business success. This makes assessing what is "best" even more difficult' (Gibbert/Krause, 2000, in Davenport/Probst, 2000: 90). Dooley et al. (2002) suggest that only through rigorous empirical studies have some best practices been identified as being "best", while case studies and single-company descriptions have identified others. And experts have declared yet others as "best" in a prescriptive manner. The authors also mention four categories related to the practice that can be relied on when assessing whether a practice is "best" or not:

1) *Goals*: what are the quantifiable objectives of the performance and have they been fulfilled?
2) *Metrics*: what are the quantified measures of performance and have they been fulfilled?
3) The *project management* involved in the practice: how are projects planned and managed, and how are the participants organized and situated to perform competent work on projects?
4) The *organizational context* in which the practice evolves: what are the supporting systems that enable competent work on projects?

Kwiecien/Wolford (2001) agree on the fact that “there really is no such thing as a best practice; as a proven practice is replicated, there’s only continuous improvement”. This underlies the *dynamic process* surrounding practice enhancement. Wenger (1996) states that a practice, as a locus of learning, is neither obstinately resistant to change, nor can it simply be transformed by decree.

According to the *model of the validation process for the classification of practices* (corporate document, 2001) presented below in figure 4, a practice evolves through three main stages of evolution: as a *useful* practice it is *validated* and becomes a *successful* practice once it has demonstrated that it can deliver results. Finally, a decision process occurs during which practitioners have to decide whether or not this practice is the most outstanding one in the organization with which to accomplish a specific task, in which case this successful practice is called a “best practice”.

Figure 4: Validation process for Classification of Practices



Source: corporate document, 2001, based on O’Dell (1998), Probst et al, (1998)

The Chevron company has designated four levels of best practice (Wright, 1998): from a *good idea* (level 1), to a *good practice* (level 2), to a *local best practice* (level 3), to an *industry best practice* (level 4). At *Chevron*, *good ideas* represent the most basic level, and although they lack analytical support, they look promising, but need testing to qualify for implementation. *Good practices* are techniques and processes that have demonstrated that they can deliver positive business results for at least one

organization and there is data that support these practices at the location where implementation has occurred. The next step, *local best practice*, is reached when the *good practice's* application has received the green light throughout most or all of an organization. At this stage, *external benchmarking analysis* is used to identify similar practices in the organization's industry, in order to justify the designation "best practice". The last level, *industry best practices*, concerns practices which have proven, through *internal* and *external benchmarking analysis* (not restricted to the organization's industry), that they can deliver the best business results, and are recognized as such by companies.

Best practice development was derived from the "knowledge development block" of Probst et al's model (1998). Probst et al (1998) regard knowledge development as "generating new skills, new products, better ideas and more efficient processes,… [which] includes all management efforts consciously aimed at producing capabilities which are not yet present within the organization, or which do not yet exist either inside or outside it". Drawing an analogy with Probst et al's model of managing knowledge (1998), the author views best practice development as the step that follows the identification of the best practice. This step confronts managers with the challenges of knowing *where* and *how* to quickly and easily find that best practice within the organization that is needed to fulfill a specific task at a specific moment, and of precisely ascertaining what that best practice can be used for.
Within the author's research model's framework, best practice development should therefore be understood as an ongoing process that begins with the *initialization* of the practice (the emergence of an idea, identification of a practice) which expands with effective *development* (reinforcement, evolution, and improvements). It is assumed that this development process is analogue to Nonaka/Takeuchi's (1995) spiraling model of knowledge creation (presented in chapter II).

To conclude this section on the ongoing process of practice enhancement, it is important to remember that the development of a best practice depends on whether:
A new practice is created by practitioners and consequently enters the spiraling process of knowledge creation (Nonaka,1991,1994) and is constantly developed through continuous learning (single- and double-loop learning, Argyris/Schön, 1978) throughout these processes until the practice is eventually enhanced.

An idea or an existing practice is improved by comparing it with a similar practice that has already proved to deliver superior business results (inside or outside the organization), and which is subsequently motivated by this best practice's key success indicators.

II.2) The transfer of Knowledge and Best Practices

"The process of identifying and transferring practices is trickier and more time consuming than most people imagine" (Jarrar/Zairi, 2000).

Best practice transfer is an important part of total quality management efforts and knowledge management (Simard/Rice, 2001), and has been identified as one of the most important managerial issues of the late 1990s (Szulanski, 1996). This section focuses on the transfer of best practices within the organization. Earl/Scott (1999) maintain that successful companies are those that "consistently create new knowledge, disseminate it through the organization, and embody it in technologies, products, and services". Zander/Kogut (1995) regard firms as social communities that enhance new skills' transfer, communication and capabilities by means of their relational structure and shared coding schemes. They assert that new knowledge is difficult to replicate if there is no "social capability". The aim in this section is therefore to build the basis of a good understanding of the phenomenon of best practice transfer. This will lead to a better grasp of chapter V which will argue that as organizational structures, communities of practice are best suited to support the sharing of best practices. In this section, *best practice transfer* will be analyzed, using the literature on both *knowledge transfer* and *best practice transfer*. The author thus refers to the knowledge contained in the best practice when using terms like *knowledge transfer* or *knowledge sharing*.

II.2.1) Problems regarding the transfer of best practices

"Whole industries are trying to replicate best practices and manage organizational knowledge – but the majority of attempts to replicate excellence fail; one reason is because in-house "experts" don't truly know why it worked in the first place"
(Szulanski/Winter, 2002).

Implementation of best practices within an organization is generally a slow and painful process marked by resistance, incomplete implementation, and failure (Simard/Rice, 2001). Furthermore, transferring best practices - in the form of knowledge management - may require more training and ability than most managers have (Zuckermann/Buell, 1998). Interestingly enough, little research has been done on the topic of best practice dissemination and implementation in organizations (Simard/Rice, 2001). The justification for the analysis has its roots in the findings of Szulanski (1996) and O'Dell/Grayson (1998), who state that several major problems related to the transfer of best practices still persist:

(1) The organization members often possess knowledge that they don't know how to apply or utilize in a practice. It is therefore difficult for the holder of this particular knowledge to transfer it to a receiver, if he is unaware of possessing it.
(2) A best practice can exist within an organization without its potential receivers being aware of its existence, knowing where to find it, or knowing how to look for it.
(3) Tacit knowledge – knowledge resulting from experience and intuition – constitutes 80% of the real-value knowledge which is contained in a practice. Since this type of knowledge is very difficult to express and to codify, therefore most of the valuable knowledge usually stays with the transmitter while the receiver often only gets 20% in a codified form.
(4) Even though the transfer of a best practice does occur, it is sometimes difficult to sustain the use of this practice through time – either though a lack of motivation, interest, training, leadership, connections between the members etc. In practice, there is a real risk of know-how loss during tacit knowledge's conversion to explicit knowledge. There isn't as yet an acceptably established procedure to actively manage best practices within the organization.

According to Szulanski (1996), the above four major problems regarding the internal transfer of knowledge are related to knowledge-related factors such as:

- the recipient's lack of *absorptive capacity* (means that prevent the use of external sources of knowledge)
- *causal ambiguity* (means that prevent the reasons for a capability's successful or failed replication being precisely identified, even retrospectively)
- an *arduous relationship between the source (of the best practice) and the recipient* (basically due to the receiver's lack of trust of the source in term of the quality of the transferred knowledge).

Largely due to these reasons, General Motors had great difficulties in transferring its manufacturing practices between divisions (Kerwin/Woodruff, 1992), and IBM only had limited success in transferring reengineered logistics and hardware design processes between business units (The Economist, 1993).

Noting that organizational structures are generally not suited to support the needs of knowledge sharing, Probst et al. (1998) assess that, "in addition to functional and geographical structures, companies need structures based on interests or particular topics…which can pave the way to an efficient knowledge network". The authors claim that in recent years many companies have introduced such structures.
The authors moreover affirm that "best practices can only be spread through different areas of a company if there is systematic sharing and distribution on knowledge". Probst et al's (1998) statements form the basis of the argument presented here. Interestingly enough, Leahy (2000) suggests that by definition, best practices are a type of horizontal initiative. Consequently, companies need a cross-functional team to promote best practices' enterprise-wide creation and communication.

II.2.2) General insights into the transfer of best practices

The Center for Applied Research (1999) (in Philadelphia, Massachusetts) broadly defines the concept of the transfer of best practices by claiming that "best practice transfer is the identification of a subset of things done at one location and adaptation of the subset to the larger set of activities at the new location". According to

Matusik/Hill (1998), transfers of best practices must be fully legitimized in companies, since a best practice is public knowledge.

The use of the term adaptation implies that the transfer of a best practice is not necessarily an attempt to duplicate everything done at one location at another. Yet, one approach regards the replication process as a “copy exactly” task (McDonald, 1998). Gibbert/Krause (2000) claim that best practice sharing (transfer) “constitutes an attempt to multiply existing knowledge in order to take advantage of the law of increasing returns” (in Davenport/Probst, 2000: 91). Szulanski (1996) defines the transfer of best practice as a firm replicating a superior internal practice, which is also regarded as better than other internal practices and alternatives outside the company, somewhere else within the organization. Rice/Rogers (1983) state that “an appropriate transfer process goes beyond imitation, and also includes reinvention”. Cole (1999) insists that even though an organizational unit may have learned how to use a new practice, imitation of this practice may be difficult due to subtle differences in the conditions within the units. Raval/Subramanian (2000) take a cross-cultural perspective with regard to global organizations operating in heterogeneous markets. They subsequently, view best practice transfer as “the transfer of best-in-class processes and methods across national and cultural boundaries, which often encounter resistance from the recipient culture”.

Through this transfer process, good practices turn into great practices when replicated across common communities of practice (Wolford, 1999). O’Dell/Grayson (1997) claim that transfer is “identifying and learning from best practices and applying them in a new configuration or new location”. This last statement implies that the learning that occurs during transfer eventually leads to an improvement of the practice during its implementation in a new location (receiver). The receiver eventually feeds this enhancement back to the source (Probst, et al., 2003). However, even though it is reasonable to expect that an in-house center’s discovered example of excellence will be eagerly copied by other organizational units (Szulanski, 1995), Simard/Rice (2001) claim that in fact the transfer of a best practice often fails, and that “organizations often fail to know what they know” (Huber, 1991; O’Dell/Grayson, 1998).

II.2.3) Main reasons for and enablers of knowledge and best practice transfer

Is it purely coincidental that *Chevron*'s network of 100 people contributed to reducing the company's annual fuel costs by $150 million? How did the intellectual capital management at *Dow Chemical* succeed in achieving an immediate return in the form of $40 million in savings? The answer resides in both companies having successfully managed the sharing of knowledge and best practices among their employees (Eliott/O'Dell, 1999). According to the *American Productivity & Quality Centre* (1996), the most common reason for companies to transfer their knowledge internally is to transfer best or exemplary practices. The other main reason is to increase employee capabilities. Eliott/O'Dell (1999) point out that organizations attempt to transfer their best practices "as a way of putting their knowledge into action, in order to learn better and faster, which results in lower costs, higher revenues, and a definite competitive advantage". Ellis (2001) reports that global organizations are, through informal knowledge sharing and managed networks, transferring and leveraging best practices to develop better business processes and save millions of US dollars in operating costs. Interestingly enough, Wolford (1999) states that a best practice can become even greater when replicated across common communities of practices – thus linking best practice transfer to communities of practice.

Eliott/O'Dell (1996) identify four enablers of knowledge and best practice transfer:

Culture, which implies that organizations that automatically promote collaboration and sharing enhance their chances of success when introducing knowledge and best practices transfer initiatives (Enkel et al. 2000; Gibbert et al., 2000; Leahy, 2000; Osterloh/Frey, 2000).

Technology, which implies that the use of the Internet/intranet/extranet reduces the costs of knowledge and best practice transfer and speeds up the process. This can, however, lead to an overload of information rather than true knowledge that enables employees to make true sense of their environment. Such technology tools are useless without the human-developed knowledge (Ruggles, 1998; Gibbert/Jonczyc, 2000, in Davenport/Probst, 2000; Szulanski/Winter, 2002).

According to Quinn et al. (1996) the key success of such systems lies in networking, groupware, and interactive software, besides having a culture and incentives that promote sharing. Probst et al. (1998) feel that although it is possible to hold team meetings in cyberspace, they aren't a substitute for direct personal contacts.

Infrastructure, which includes transfer mechanisms like technology, work processes and people networks that will ensure the diffusion of best practices throughout the organization (Ruggles, 1998; McDermott, 1999; Wolford, 1999; Wenger/Snyder, 2000; Wenpin, 2001; Wenger et al. 2002). A practical example of such an infrastructure is found at *Johnson & Johnson,* which places emphasis on its knowledge communities of practice that share information and knowledge globally.

Measurement of the transfer efforts by in order to gauge the effect of these transfers on company performance (Probst et al., 1998; Gibbert et al., 2000, in Probst/Davenport, 2000; Dachs et al. 2000). At *Buckman Laboratories*, for example, the effects of such knowledge and best practice transfer efforts have been visible in revenues of new products being increased by 50%.

II.3) Communities of Practice (CoPs)

"Companies are beginning to recognize that these communities can be supported and leveraged to benefit 'membership' of communities and the organization as a whole. Companies are starting to sponsor the formation of communities and to support their ongoing activity"
(Gongla/Rizzuto, 2001)

This section begins by drawing a general picture of communities of practice, and establishing the general links between this networked structure and best practices. The following sub-section (II.3.2) presents Wenger/McDermott/Snyder's (2002) seven main principles for cultivating CoPs.

II.3.1) The notion of CoPs and their link to best practices

When Lave/Wenger (1991) first mentioned the term *communities of practice* in the literature, they defined them as "a set of relations among persons, activities, and world, over time and in relation with other tangential and overlapping communities of practice". A more practical approach is presented by Wenger et al. (2002), who describe a community of practice as a group of employees who share a common interest for a defined subject, and who exchange information and knowledge across and beyond organizational boundaries, with a motivation to develop new knowledge or best practices. CoPs focus on practical aspects of a practice (McDermott, 2001). According to Wenger (1998), CoPs imply a shared practice between its members, and exist in any organization. He adds that because membership is based on participation rather than on official status, "these communities are not bound by organizational affiliations; they can span institutional structure and hierarchies". For Liedtka (1999), the community's practice exists and evolves in its social interaction and not in its members' individual heads and hands. Brown/Grey (1998) mention that CoPs are at the simplest level, a small group of people who've worked together over a period of time; "not a team, not a task force, not necessarily an authorized or identified group". He adds that what holds these individuals together is "a common sense of purposes and a real need to know what each other knows". Comparing CoPs to teams, McDermott (1999) states that "the heart of the team is a set of interdependent tasks that lead to an objective, whereas that heart of a CoP is the knowledge members share and develop". A CoP is, in fact, a group of people who learn together and create common practices (McDermott, 1999). The community and the degree of participation in it are inseparable from the practice (Kimble et al., 2001). CoPs can share knowledge related to best practices across an enterprise's geographical and organizational boundaries (Hildreth et al., 2000), and are much more efficient at doing so if they get support from top management (Wenger et al, 2002). Brown/Duguid (1991) maintain that members of a CoP should work together on a regular basis to find solutions to common problems, and then evaluate the achieved results together.

Wenger (1998) and O'Dell (1998) suggest that CoPs could resolve the following major unresolved problems pointed out by Szulanski (1996) and O'Dell/Grayson (1998):

(1) The members of the organization often are in possession of knowledge for which they don't know the applicability or the utility for a practice; hence, it is difficult for the beholder of this particular knowledge to transfer it to a receiver, if he is unaware of holding it.
(2) A best practice can exist within an organization, without its potential receivers being aware of its existence, knowing where to find it, or knowing how to look for it.
(3) Tacit knowledge – knowledge resulting from experience and intuition – counts for 80% of the real-value knowledge which is contained in a practice. Since this type of knowledge is very difficult to express and to codify, what veritably has value usually stays on the transmitter's side, and the receiver often only gets 20% of this valuable knowledge, in a codified form.
(4) Even though the transfer of a best practice takes place, it sometimes is difficult to sustain the use of this practice through time – or by lack of motivation, of interest, of training, of leadership, of connections between the members, etc. In practice, there really exists a risk of know-how loss during the conversion of tacit knowledge to explicit knowledge. There isn't yet a real established procedure to actively manage best practices within the organization.

With reference to the problems related to "knowing what the organization knows", O'Dell/Grayson's (1998) suggested that the solution to these problems is to build communities of practice in order to allow the members to continuously exchange their knowledge linked to practices. Wenger (1998) considers the problems related to the tacit knowledge within a practice and to maintaining the utilization of a practice over time by emphasizing CoPs' very dynamic and social aspects: the members know one another and are intensely dedicated to the development of best practices over time. Wenger (1998) suggests that since the links between these individuals are very dense, the creation and exchange of tacit and explicit knowledge contained in best practices are encouraged and stimulated. Regular face-to-face contact between members is stressed in order to optimize the transfer of tacit knowledge. Consequently, the quasi totality of tacit knowledge contained in a practice that has been developed within the community of practice remains within the network, which considerably diminishes the risk of this know-how being lost (Wenger, 1998; Wenger et al., 2002).

Hildreth et al. (2000) perceive CoPs' networked structure as appropriate for development and transfer of knowledge. In their conclusion, they furthermore state that tacit knowledge, which is difficult to codify, could be the key to an enterprise's continuity, but that for tacit knowledge to be exchanged and kept "alive" within the organization, the enterprise has to foster the creation of CoP networks at an international level. Since a best practice is essentially constituted of tacit knowledge (Bogan/English, 1994; Szulanski, 1993, 1995, 1996; O'Dell/Grayson, 1998; Jarrar/ Zairi, 2000; Ellis, 2001), it seems implicit that a CoP organizational structure is well suited to the development and transfer of best practices. Liedtka (1999) asserts that best practices exist and evolve in the "social interactions" of CoPs, simultaneously with the development of "individual and collective capabilities".
For Büchel/Raub (2002), the transfer of best practices should occur between practitioners who share a high degree of trust, interpersonal relations, and shared experiences. This last statement is especially relevant in respect of a community of practice structure.

In his research, McDermott (2002) makes reference to the problems with regard to "knowing what the organization knows" and tacit knowledge contained in a practice by stating that "tacit knowledge is the real gold in knowledge management and communities of practice are the key to unlocking this hidden treasure". This undermines the idea that CoPs are a structure that is well suited to identifying, capturing, keeping alive and further developing the tacit knowledge encapsulated in a best practice, and having this practice evolve through time. In 2000, Wenger/Snyder claim that only several dozen forward-thinking companies have installed or nurtured such communities.

II.3.2) Nurturing a community of practice

> *"Communities of practice are organic. They grow and thrive as their focus and dynamics engage community members. But to make them really valuable, inclusive and vibrant, they need to be nurtured, cared for, and legitimated. They need a very 'human' touch"*
> *(Mc Dermott, 2001).*

The reason for developing the theme of nurturing CoPs is to understand what the concrete actions are that have to be taken for these networks of people to function and to create value for the organization. As put by Liedtka (1999), "with its emphasis on individual and collective learning, organizational purpose, and systems' outcomes, a CoP appears especially well-suited for on-going value creation in a time of change". In the framework of this discussion, this *value creation* should be understood as the CoP's capacity to develop and share best practices. This is based on Edmundson's view (2001) according to which CoPs add value to a company by acting as distribution points for best and emerging practices, sharing lessons learned, providing forums in which issues and problems can be raised and resolved, and by learning from each other. Vestal (2003) adds that CoPs are expected to produce measurable results that benefit the company, such as cost reductions and revenue increase, which will be verified in chapter V (research findings).

This following section on CoPs forms the basis for understanding Wenger et al's (2002) *7 main principles of cultivating a community of practice*. These principles, which are also complemented by various authors' views, help with understanding this networked structure's dynamics.

II.3.2.1) Principle 1: Design a favorable frame in which CoPs can evolve

a) Build on existing networks: Communities of practice exist naturally throughout the organization, which means that the participants haven't been formally brought together in a networked structured (Wenger, 1998, McDermott, Hildreth et al., 2000; Wenger et al., 2002). Indeed, the main idea behind allowing and encouraging these networks to evolve is not for the organization to impose any particular structure on CoPs, but

rather to shepherd their evolution, which starts with existing networks, encouraging them to evolve around topics that are at the heart of the company's business (called "burning issues"), and involving thought leaders as soon as possible to build energy into the community (McDermott, 1999; Wenger et al., 2002). Once it has spotted an important topic around which to form a CoP, the organization should find those networks of individuals who already share knowledge about that specific topic (McDermott, 1999). Thereafter the organization should make sure that the people are encouraged and have sufficient time to participate in the CoP (McDermott, 2001). CoPs are only one form of knowledge networks, however, whatever their form, "these networks need to be focused on strategic business/corporate priorities, a network context needs to be created, network activities have to be routinized, and network outcomes must be leveraged (demonstrate tangible network outcomes)" (Büchel/Raub, 2002). CoPs should be given the liberty to design their network in the way that best suits their evolution (Wenger et al., 2002). Even though CoPs evolve around practices, Büchel/Raub (2002) make a distinction between CoPs and best practice networks by stating: that "[w]hereas CoPs primarily focus on the informal gathering of individuals based on shared interests" and hence may appear to be more "unmanageable" endeavors, "best practice networks have more organizational support".

***b) Accept CoPs as self-organizing systems*:** Although CoPs can be developed, they are essentially self-managed and self-organizing (Gongla/Rizzuto, 2001). For Wenger (1998), CoPs reflect the members' own understanding of what is important. For him, this understanding can be influenced by outside constraints or directives; but even then, members develop practices that are their own response to these external influences. He adds that even when a community's actions conform to an external mandate, "it is the community – not the mandate – that produces the practice; in this sense, CoPs are self-organizing systems".

Snyder/Wenger (2000) claim that managers cannot mandate CoPs; instead, managers should "bring the right people together, and provide an infrastructure in which communities can thrive". According to Büchel/Raub (2002), network participants' social and technical skills have to be considered to ensure that the right people are connected in order to solve common problems. More precisely, McDermott (1999) suggests that *intentional* CoPs should be created, "which are intentional in their

focus, start-up activities and support" but that rather than imposing an artificially developed community, the trust, linking and sharing of knowledge should be developed that are required to support a natural community development process.
The dynamic and organic nature of a CoP brings new entrants to the community – thus reshaping the community - who bring new interests, and shift the CoP's focus into different directions (Brown/Duguid, 1991). However, the core members of the community determine who to include and who to exclude from the community. This is an important unifying decision process, since a right choice enables the right new entrants to contribute to the community's objectives (Gongla/Rizzuto, 2001). The dynamic aspect of CoPs is also pointed out by McDermott (2001) when he states that "the specific issues that CoPs focus on change over time, as the needs and interests of their members change". CoPs grow and thrive as their focus and dynamics engage community members (McDermott, 2001).This informal and dynamic structure creates circumstances that make learning empowering and productive, which leads the community to evolve in terms of how well it uses its practices, transfers them, or even creates new ones (Wenger, 1996).

c)CoPs need a "human touch" to fully deploy their effectiveness: For CoPs to be made valuable in terms of knowledge sharing, inclusive and vibrant, they need to be cared for, nurtured, and legitimize. CoPs therefore need a very human touch (Brown/Grey, 1998). Gongla/Rizzuto (2001) claim that members of a CoP must have the community concept securely planted in their hearts and minds, so that experiences can be freely shared and can generate practice development. McDermott (2001) makes it clear that one of the main dynamics of CoPs is for its members to ask one another for help and offer help in solving technical problems. To enable CoPs to create and share knowledge related to practices, the community needs to thrive on trust. The members of the community's sense of trust and a greater connection increases when people work together regularly and have frank and supportive problem-solving discussions (Lesser/Storck, 2001; Gongla/Rizzuto, 2001). Practically, it is not that easy to build and sustain CoPs, or to integrate them into the rest of the organization, since "their organic, spontaneous, and informal nature makes them resistant to supervision and interference" (Snyder/Wenger, 2000). Actually, practitioners and theoreticians still have little experience in developing and sustaining this type of organizational organic structure (Wenger et al., 2002).

II.3.2.2) Principle 2: Know the "inside" perspectives of the community and build dialogues with perspectives "outside" the community

a) Know the inside perspectives and build upon them: One of these perspectives is pointed out by Wenger et al. (2002) who assert that CoPs need "insiders" who are able to appreciate the community's issues, which are at the heart of the knowledge domains. Fontaine (2001) defines these knowledge domains by asking the following questions: What is the topic the CoP is going to focus on? What knowledge area contributes most to the organization/division's business objectives? What important sub knowledge areas and issues should be addressed first?". However, according to Ashkanasy (2002), before the community starts reflecting upon its knowledge domains, it must cope with the basic perspective that the CoP is not going to be able to flourish and to deliver real benefits "unless the organizational practices, culture, and values first become conducive to letting line employees organize themselves in this fashion". Ashkanasy (2002) adds that a CoP has to evolve with the collective perspective surrounding the community, and that it is only with the relatively recent movement toward democratization of the workplace, more commonly referred to as employee empowerment, "that we have at last been freed from many of the structures of organized power relationships". The author adds that there are some principles of empowerment allowing employees to realize their true potential, and to "form extra-organizational communities dedicated to solving particular problems".

Returning to knowledge domains, Vestal (2003) argues that they are often based on: methodologies, technologies, processes, products, and customers. In other words, these domains relate to practices. Liedtka (1999) stresses the importance of having a capacity for dialogues across the visited themes, which implies "an openness to sharing one's thoughts, a willingness to listen and understand the perspectives of others, and to challenge one's own, as well as others' thinking". This should enable conflict to be used productively, to look for better solutions, rather than merely for debating existing alternatives.

Another of these inside perspectives is depicted by Moreno (2001) who asserts that CoP members should have a strong awareness that they are part of a structure "which complements the existing structures and enhances knowledge exchange and organizational learning". A deep awareness of this fact should foster their motivation to work and learn together by making knowledge sharing the *fuel* of their cooperation in

order to generate and share best practices. CoP members should be able to talk to one another confidentially about their knowledge initiatives and requirements, so that the internal perspectives about how to include that knowledge in a practice can be shared throughout the community (Storck/Hill, 2001).
This learning perspective can be achieved as long as these "likeminded people of CoPs are willing to adhere to a learning-to-learn process" (O'Dell/Grayson, 1998). Lave/Wenger (1991) mentioned the perspective of "learning by legitimate peripheral participation", meaning that in these communities, newcomers learn from old-timers by being allowed (legitimized) to participate in certain tasks relating to the community's practice. Kimble et al. (2001) specify that *legitimization* is the aspect that is concerned with power and authority relations in the community, whereas the terms *peripheral* and *full participation* are used to denote the degree of engagement and participation within the community. Over time, newcomers move from peripheral to full participation in the community, and the degree of participation is inseparable from the practice (Hildreth, et al., 2000; Graham, 1998). For Wenger et al. (2003), CoPs follow the perspective of continuously knowing what challenges they face.

Lesser/Everest (2001) and Graham et al. (1998) present generic challenging perspectives that can contribute to improved business results if achieved:

1) *Foster easier circulation of practice-related tacit knowledge through human contact*: Langford (2002) maintains that approximately 70 percent of any organization's knowledge is tacit, and that it's quicker and more natural for people to share knowledge orally, "where they can expand and explain the context of written information and share insights". Lesser/Everest (2001) insist that CoPs should do much more than just rely on technology to share knowledge: they should rather focus on building "the appropriate connections, relationships and context that allow knowledge to flow between those who have knowledge and those who require it". In this regard it seems justified to emphasize face-to-face meetings. Lesser/Everest (2001) also argue that an environment should be fostered in which knowledge can be created and shared, and, "most importantly, used to improve effectiveness, efficiency and innovation". According to McDermott (1999), a challenge for CoPs is to organize ongoing face-to-face meetings, so that members get to know other members of the community and "develop a sense of trust and mutual obligation that are necessary for

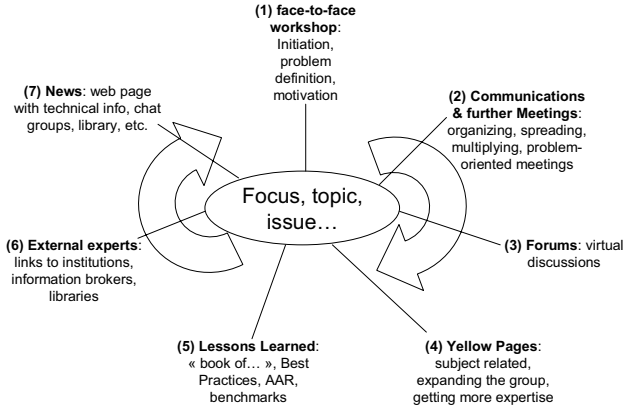
the sharing of tacit knowledge". Expanding the community's membership and an increase in member involvement are achieved through face-to-face meeting (Brown, 2002). These face-to-face meetings also serve to recognize members' contribution in terms of idea and knowledge sharing, and confer legitimacy to their participation in the community (Wenger, 1998, 1999).

2) *Facilitate and support the learning process of new members*: CoP members should spontaneously be willing to help newcomers identify subject-matter experts to answer their questions and guide them to resources ,whether it be within the CoP, within other CoPs, elsewhere in the organization, or even outside the organization (Lesser/ Everest, 2001). This method of learning that occurs through others' support, quite naturally transforms itself into a learning-to-learn approach in time. It may enable individuals to absorb practice-related knowledge faster and more deeply, since they become "aware of the process of learning itself" (Probst/Büchel, 1997).

3) Sustain community life through time: An inside perspective which members need to constantly keep in mind, is that merely talking about issues within the CoP is not sufficient. They must be aware that they have to produce something from their collaborative learning, so that the community has a chance to further evolve, and gain legitimacy within the organization (Lesser/Everest, 2001).
According to Graham et al. (1998), people loose interest if there isn't an organization-wide sense of direction or a purpose to the groups, and "when there is no leader within the groups to encourage participants to form a common goal and give a mission to the community". Langford (2002) adds that assessing and recognizing individuals' contributions within the community has a positive effect on its sustainability, and encourages further development of the CoP.

Edmundson (2001) asserts that it is vital for the community to decide how to share and develop knowledge within its frontiers, but also with others outside the CoP, or even outside the organization. This provides a link to the next point of the second principle, that will provide a model for sharing. The model (figure 5 below) suggests a process to support the evolvement of focuses, topics, or issues that lie within the CoP, and ways to gain new perspectives on them.

Figure 5: Ongoing process of evolvement in CoPs



Source: corporate document, 2001, based on McDermott, 1999

b) Build a dialogue with "outside" perspectives: CoPs are still new for most organizations, so it often requires an *outside perspective* (outside the CoP, or the organization) for the members to see what other possibilities exist, and "how a more developed community could improve upon their current personal networks or help them leverage dormant capabilities" (Wenger et al., 2002). Indeed, importing information from outside sources provides further insight into what the community could achieve, and how other outside communities organize themselves to develop and exchange their practices. Graham et al. (1998) mention that members of a CoP should be able to move to another CoP within the organization at any time. They add that employees can even belong to more than one community and encourage cross-fertilization of ideas, "as long as they remain within the administrative guidelines regarding time spent on communities activities". Lesser/Everest (2001) claim that through the CoP *coordinator*, whose task is chiefly to connect his community to other communities, outside perspectives can be gathered within the organization. O'Dell/Grayson (1998) illustrate the importance for CoP members to have the possibility to be connected to other communities by means of the example of *Chevron's Best Practice Resource Map*: it identifies the entrances into many CoPs

within the company, and provides a link with the primary contact of each one of these networks. Subsequently, members can exchange different communities' different perspectives, or even exchange perspectives with non-community members elsewhere in the organization. According to Hildreth et al. (2000), a way to gather outside perspectives is for the CoP to look for people distributed within the organization who may have something in common with members of another CoP, or even with CoP members of another organization. They propose that the search be completed via an organization-wide distributed questionnaire comprising metrics such as:

1) Are these people in regular contact with colleagues/peers doing the same job?
2) Do these people talk with colleagues to solve problems?
3) Do they share projects with other colleagues?
4) Do they swap anecdotes/experiences with colleagues?
5) Do they learn from discussions with colleagues?

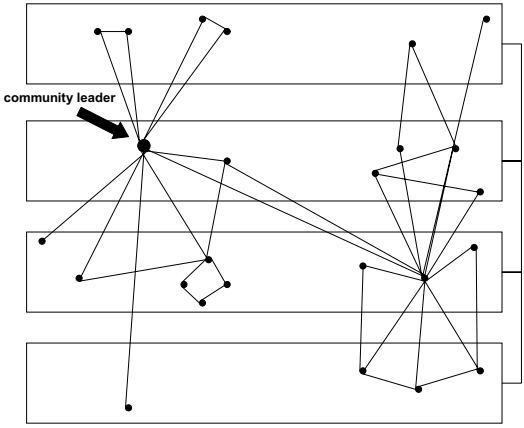
Individuals responding positively to these five metrics can then be contacted to foster an exchange of perspectives. According to Wenger/Snyder (2000), a CoP can even be constituted of members from different companies who unite to discuss and elaborate shared issues. These members then import these gathered insights and perspectives back into their own CoP within their own organization. This statement is based on Lave/Wenger's (1991) interpretation of a CoP as "a set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice". Wenger/Snyder (2000) also underline the necessity for a CoP to have a *facilitator* (or coordinator) whose role is primarily to "keep the community current on information from external sources".

By consulting external experts, or applying external benchmarking to compare the CoP to other CoPs, provides a range of new perspectives and ideas that could potentially be put into action (Augenstein, 2003). In fact, Perez (2002) stresses that effective CoPs require formal establishment of processes and practices, thus "enabling them to efficiently capture, share, and apply what they know across the organization", and that the processes of best practice captured within the CoP have to be documented. The idea is thus for the CoP to compare its processes with those of other CoPs – within or outside the frontiers of the organization- and to gain insight into how they are organized and what perspectives guide their actions. In other words, to

benchmark themselves against other CoPs in order to establish which is currently the best (Balm, 1992). In turn, this benchmarking will serve “to identify problems, establish ideal performance levels, and create an improvement plan” for the community (Leandri, 2001). To foster assimilation and adoption of outside perspectives, O’Dell/Grayson (1998) accentuate the necessity of being willing to identify, understand, and adapt outstanding methods from others, in order to “break established paradigms, create a readiness for action, and provide models of excellence”.

Another approach to gather “outside” perspectives is suggested by McDermott (1999). The author proposes a *double-knit organization* model that interweaves cross-functional teams with CoPs within the same organization. It therefore provides a more meaningful exchange of learning and different perspectives. This allows each respective CoP to benefit from the different perspectives emanating from different teams, and allows team members to import new insights gained in the CoP back to their formal jobs. For Wenger (1998) the generic difference between a *CoP* and a *team* is the following: the shared learning and interest of a CoP’s members keep it together. It is defined by knowledge rather than by task, and exists because participation has value for its members.

Figure 6: Double Knit Organization



Source: McDermott, 1999

Table 1: Differences between Teams and CoPs

Teams	Communities of Practice
Driven by deliverables •Shared goals and results •Value defined by charter •Value in result delivered	**Driven by value** •Shared interest or practice •Value discovered / evolves •Value in ongoing process
Driven by task •Interdependent tasks •Clear boundaries	**Defined by knowledge** •Interdependent knowledge •Permeable boundaries
Develops through a work plan •Everyone contributes •Managed objectives through objectives and workplan	**Develops organically** •Variable contributions •Managed by making connections
Bound by commitment •Joint accountability •Based on explicit agreement •Team leader or manager	**Bound to identify** •Reciprocal contributions •Based on trust •Core group / coordinator

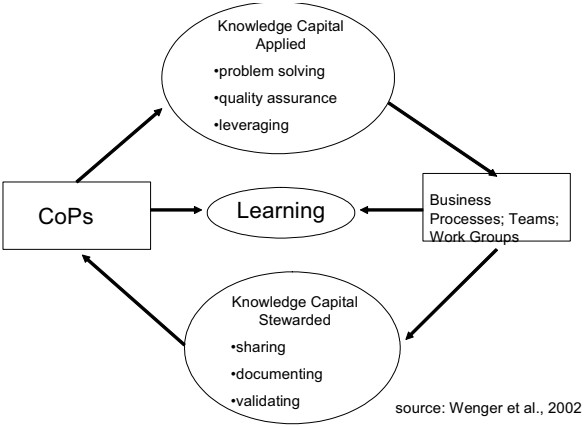
Source: McDermott, 1999

Referring to this *double-knit structure*, Peile/Briner (2001) expand the concept by asserting that team members can be part of several teams at the same time, and additionally take part in a CoP. By a member simultaneous belonging to several different horizons, the variety of perspectives in his mind is increased and therefore

nurtures the CoP he joins with a broader range of perspectives. Wenger (1998) gives the example of engineers, each of them working on projects in their own respective *teams* (within the same or different organizations): these same engineers regularly unite in the same *CoP* and share the same concerns. Because they know one another well and trust one another, they can cultivate a regular exchange of different perspectives, ideas and knowledge that have been acquired in the respective teams to which they belong.

O'Dell/Grayson (1998) mentions the existence of *best practice teams*, which are an ongoing part of the organization's networked structure, "with a charter to support the transfer and implementation, as well as identification of practices". The authors add that there is a real need for "stable networks of practitioners and centers of excellence in technical and functional fields". Hence, one of O'Dell/Grayson's question (1998) is: "how do you bring those people together in a community of practice so that expertise can be shared?". An idea is to identify these individuals and to encourage them to share their perspectives about the best practices that they encounter with the CoP. The members of a best practice network could eventually be integrated into the CoP, leading to a *double-knit organization*, and bringing "fresh" perspectives into the CoP. Referring to the *double-knit organization*, Wenger et al. (2002) state that "practitioners themselves, in their dual roles as both community practitioners and operational team members, help link the capabilities of CoPs to the knowledge requirements of teams and business units", and this "loop" can work the other way round by bringing new perspectives that are prevalent in teams into the CoPs. This "cycle" is illustrated with the model depicted in figure 7 below:

Figure 7: The multimembership learning cycle in the 'double-knit' organization



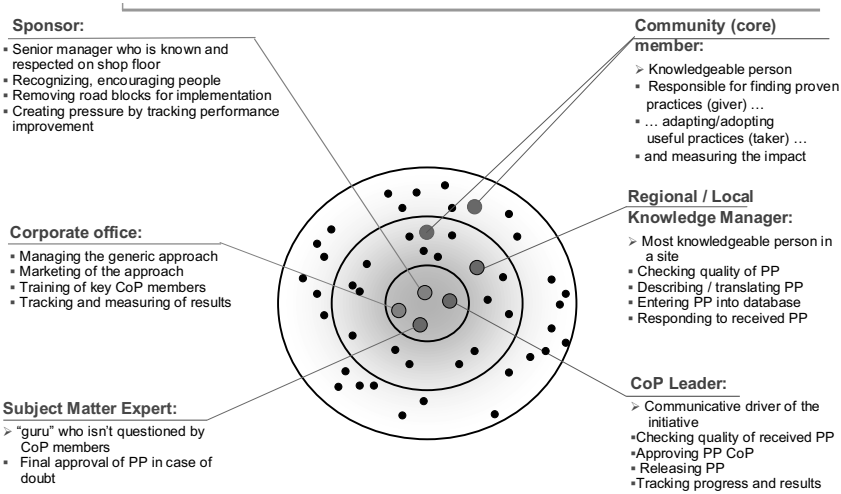
Another means of obtaining outside perspectives is through the study of *stories* in the form of narrations, discussions, reports, or written business cases in other CoPs, whether inside or outside the organization. It is also a way for a CoP to gain insight into alternative perspectives prevalent in other settings. *Stories* represent a means of teaching, and might be presented explicitly in the form of morals and rules, or through explicit conclusions and instructions (McErwan, 1997 in Jonczyk, 2001). For Hughes (1995) (in Jonczyk, 2001), stories represent a way of experiencing someone else's reality, thereby "transmitting perceptions". Boyce (1996) stresses that *storytelling* is a means of solving organizational problems by sharing the story of an "ideal" organization which is then compared to the actual organization. This is exactly the type of "external observation" that a CoP can do if it intends to build upon outside perspectives that have proved to lead to success. If the story-telling process is done with a sufficient degree of interaction, it allows the transmission of tacit knowledge in order to arrive at a solution to a problem. This new perception then becomes part of the community's stock of knowledge (Brown/Gray, 1998; Hildreth et al., 2000). However, Hildreth et al. (2000) specify that the listener also needs his/her tacit knowledge "in order to interpret the stories, either to understand them, or to make new inferences from them". The storyteller's understanding is based on his own perception, and it is his own version of the social world, which is inevitably related to a social and cultural context (Jonkzyk, 2001). This implies that the listener has to adapt these

outside perspectives to his own community's inside perspectives, which requires an understanding of the differences between the "sending" and the "receiving" contexts (Szulanski, 1996).

II.3.2.3) Principle 3: Invite different levels of participation within the community

This part examines a CoP's generic structure, explaining who the network actors are and what their roles are according to the definitions and a model based on Wenger et al. (2002) and Wenger (2004).

Figure 8: Key roles and responsibilities in CoPs



source : based on Wenger et al. , 2002, Wenger, 2004.

By giving the main characteristics of each of the actors and their degree of participation in the CoP, the aim is to provide a generic picture to better visualize the processes of best practice creation and transfer within a network.
The following guideline of the different roles in a community are taken from the figure 8 above and complemented by other scholars' views.

The community leader: who is also called a *coordinator* or *facilitator*, focuses on the communication amongst the members and is part of the core group. He must be a well-respected individual (McDermott, 2001) in order to gain the members' commitment, and trust, and to be perceived as credible. Gongla/Rizzuto (2001) call the coordinator a "knowledge broker" who has the "matchmaking responsibility" of locating and connecting members who seek knowledge from others in the CoP who have that knowledge. This community driver is a leader who takes responsibility for the community's overall vitality and effectiveness, and who promotes the CoP's value in respect of the formal organization (Lesser/Everest, 2001). He is the *dynamic turntable* within the CoP who connects members by organizing community events (Wenger et al., 2002), and who tries to identify "burning issues" (Raub/Büchel, 2002).

According to Wenger et al. (2002), the coordinator has the main tasks of planning and facilitating community events, and helping to build the practice – including the knowledge base, lessons learned, best practices, tools and methods, and learning events. According to Mc Dermott (2001), the coordinator should "walk the halls" between meetings, to "connect people with others who share similar concerns, following up on the meetings topics, and finding topics for the next meeting". The *coordinator* ensures that he responds regularly to members' queries and keeps them updated with information from external sources (Wenger/Snyder, 2000). For Raub/Büchel (2002), the coordinator of a "knowledge network" has to "create a network context that enables the sharing of knowledge by laying the groundwork for effective cooperation within the confines of the network by fostering trust". Graham et al. (1998) and Raub/Büchel (2002) also stress the importance of the network coordinator being assisted by a support structure which includes an *administrative assistant* who handles the network's operational activities (i.e., organizing and posting the information generated by the network members, maintaining the network's database and intranet, organizing and scheduling network meetings, facilitating focus groups for feedback on the CoP's program as a whole). One of the practical tasks that the administrative assistant can fulfill is to post the meeting notes on the CoP's website, so that the main points discussed are stored in a codified form (McDermott, 2001). With this support, the coordinator can devote more time to the network's effective development. However, being at the heart of the CoP, the coordinator must be careful not to let his attention drift away from the community's activities, since this would put the community's life at risk (McDermott, 2001). This is why the coordinator should try to involve real thought leaders with the core community members, and thus insure the ongoing building of energy, shared involvement, and shared responsibilities within the community (McDermott, 2001).

The core members: they are part of the core group and, through their recognized competencies, are very actively involved in the practice(s) within the community (Fontaine, 2001). The core members are strong contributors who make the most of the meetings, which are usually held in a very informal way (McDermott, 2001). They actively participate in discussions and debates in the CoP's public forum, and participate in community projects, identify and develop core topics, and guide the CoP along its learning agenda (Wenger et al., 2002). Storck/Hill (2001) call these core

members “knowledge leaders”, which highlights their skills and expertise regarding the CoP’s topic. Storck/Hill (2001) claim that these knowledge leaders have enough expertise to identify other people’s strengths and skills within the community; they should therefore act as “conduits” to put these individuals in touch with one another, so that the knowledge of the practice-related topic can evolve within the community. Lesser/Everest (2001) regard core members as responsible for providing the community with the following services: supervising the *intellectual capital repository* comprised of tools, methods, and best practices that have been documented; supervising the *electronic discussions forums*, allowing practitioners to have asynchronous discussions, ask each other questions about practices, or ask for help; supervising that the *registry of CoP members* contains full and correct personal data, so that community practitioners can find the right person with the right knowledge and competencies they are looking for, supervising the *newsletters system*, so that members can be informed of forthcoming community events on a regular basis, and be invited to contribute; organizing regular conference calls, to keep members informed of practices’ developments and to exchange knowledge, experiences, and stories; offering the coordinator and the administrative assistant support with the organization of community meetings and conferences.

Core members provide intellectual and social leadership, and the passion they have for the community’s topic “energizes the community” (Wenger/Snyder, 2000).
McDermott (2001) argues that core members should be regarded as potential successors to the coordinator, and even though they might not necessarily be world experts on the CoP’s topic, “what makes them effective is their heartfelt caring about the topic and the community”. It is important that these core members be visible in the community, so that people know who to refer to when providing knowledge of the relevant practice that is to be developed within the community (Wenger, 1998). The success of the community depends greatly on their degree of commitment and involvement (Vestal, 2003).

The community members: they are part of the “active” or “peripheral” zones and their degree of participation oscillates between “active” and “limited” (Lesser/Everest, 2001). Their responsibility is to participate in the community’s activities, to learn, and to share their learning within the CoP. The most active members participate by

regularly attending meetings, and occasionally taking part in discussion forums, but not with the same frequency as the core members (McDermott, 1999; Wenger et al., 2002). McDermott (2001) adds that even though certain members, whom he calls "lurkers", might not contribute actively to the CoP, they still extract value from it by finding out who is working on what, and by learning about the fields of concern in order to make contact with the appropriate people later. With more commitment and involvement, these members could, in time, become core members (McDermott, 2001). Wenger/Snyder (2000) recommend that before a CoP member is recognized as an expert, he should complete one knowledge development project per year – such as the documentation of a best practice – in order to remain in the CoP. The majority of the members, however, are part of the *peripheral zone*; this means that they mainly watch the interactions between the core and active members, either because they feel their contribution would not be appropriate for the community, or because they simply don't have time to provide an active contribution (Wenger et al., 2002). However, being passive and simply "observing and listening" to what goes on in the CoP can provide members with some valuable insights, which may be useful once they have a formal position in the organization, or even if they want to start their own CoP one day (Wenger et al., 2002).

The Sponsor: he is the link between the CoP and the rest of the organization. Wenger/Snyder (2000) stress that the organization should provide the CoP with an *official sponsor* (or a support team) whose role is not to prescribe the CoP's activities, nor its outcomes, but merely to work with community leaders to provide resources and coordination. The sponsor thus supports the community with resources and sets its main objectives, and is often a member of the top management (McDermott, 2004). The sponsor must review the network's activities by making sure that they are in line with the business/corporate strategies established by the top management, as well as providing *top management support* when it is needed (Raub/Büchel, 2002). By linking the CoP to the top management, the sponsor should ensure that the management "invests time and money in helping the community reach its full potential, which means intervening when it runs up against obstacles" (Wenger/Snyder, 2000). By being the link between the CoP and top management, the sponsor illustrates the importance of getting support from the top management concretely. Wenger et al. (2002) mention the existence of an even more dedicated sponsor, whom they call a *champion* and

define as “a senior manager who believes strongly that CoPs should be a primary mechanism for managing knowledge in the organization”, and who “aggressively supports the development of communities by providing guidance, funds, visibility, legitimacy, or other means of clearing the way for communities to thrive and achieve results”. In this context, O’Dell/Grayson (1998) stress that leaders from the top management can diffuse a culture of best practice transfer throughout the organization – and therefore support the formation of CoPs - by endorsing an active and supportive role, by: having the success stories told at each top executive meeting; trying to abolish the ‘not-invented-here’ syndrome; reinforcing and rewarding positive behavior and promoting the right people; showing commitment and learning through action, and providing feedback on how the CoPs are doing; constantly reminding employees that the most important thing that they can do is to share and use best practices, and applying the above approaches to the entire organization.

II.3.2.4) Principle 4: Develop both public and private community spaces

Traditionally, core organizational decisions have been focused on a few key structural choices, behind which lie an organization framed by a division into a classic hierarchy (Barlett/Ghoshal, 1998). Consequently, knowledge cannot flow freely in an environment in which relationships are formalized, and units are compartmentalized, and collaboration is too weak to be able to foster organizational learning (Barlett/Ghoshal, 1998). Finally, the authors conclude by claiming that these days increasing numbers of companies are trying to develop as “specialists in collaboration”, in order to develop and diffuse knowledge internally, and to make organizational learning a source of competitive advantage. Hence, the meaning of this fourth principle derived from Wenger et al.’s model (2002) is to show how CoP members manage to share *common spaces* in which they can interact to develop the community’s practice. These exchanges occur on two levels: on a *public* level, available and visible to all members, and on a *private* one, which fosters one-to-one networking, and solid and trusting relationships. According to Wenger et al. (2002), the aim is to simultaneously develop member interactions in the *private* and *public* spaces. The authors believe, however, that cultivating strong one-to-one relations (*private space*) allows members to know and trust one another better, and therefore collaborate better once they meet in the community’s *public* space again.

a) Public Community Space: On the broadest level, the *public space* shapes itself according to where members gather – either face-to-face or electronically at meetings, or on a website – to exchange tips, ideas, tools, explore new ideas, and techniques related to the practice being developed (Lesser/Everest, 2001; Wenger et al., 2002). CoPs' *public* and *private spaces* should allow relationships to emerge via true discussion, instead of through simple reports on best practices (McDermott, 2001). Some main characteristics of the IT infrastructure that supports the *public* activity of a dynamic CoP are presented below. This is followed by *public face-to-face meetings*.

***IT facility*:** This part concerns the *information technology infrastructure* needed to support the exchange of data, information, and explicit knowledge related to a practice between members. As stated by Gongla/Rizzuto (2001), "the CoP needs a place to put the explicit knowledge it is accumulating so that current and future members can easily access it and use it". McMaster (2003) moreover believes that the possibilities of modern technology, coupled with the informal structure of CoPs, make the formation of these communities quite easy to accomplish. Specialists, however, are required for the management of this IT system, which needs constant updating and arranging of the accumulated data and explicit knowledge developed by the community (Edmundson, 2001; Peltonen/Lämsä, 2004). Gongla/Rizzuto (2001) maintain that an IT infrastructure concretizes the design and maintenance of whatever taxonomy is appropriate for the CoP's knowledge domain.

A tailor-made IT infrastructure for a CoP facilitates communication among its members through: basic phone calls, conference calls, voicemail and an e-mail distribution list, chat rooms, forums, bulletin boards, and a community homepage database (Hanley, 1998; Gongla/Rizzuto, 2001, Perez, 2002). Community *portals*, *sharenets*, *expert and community yellow pages*, and *electronic databases* provide the indispensable platform where CoP members can request help or post their good ideas electronically (Hanley, 1998). *Electronic discussion forums* can record and retain important decisions, arguments or ideas that have emerged for future reference (Hanley, 1998). The *digital public space* of a CoP can also be extended to an *associated industry bulletin board to*, for example, communicate with the "outside world" (Moreno, 2001). Marshall et al. (1995) stress the importance of building a bridge between large-scale *information bases* - like *digital libraries* - and the CoP's day-to-day activities through what they call a "community memory" integrated into the IT infrastructure. Supported by the IT

infrastructure, this community memory provides dynamism to the IT facility by including, e.g., members' discourse, collected material, answers to frequently asked questions, members' evaluations, recommended sources, or queries. Marshall et al. (1995) feel that this digital community memory needs to be seeded, maintained, and generalized. It must be useful to the community members by contributing directly to the work activities, but should simultaneously also reflect the evolution of the shared understanding between the CoP members - who have to be mutually aware of one another's contributions. The authors claim that an effective community memory "can't exist in isolation either from the task at hand or from the information resources to which they refer". Structured "digital interactivity" between members, coupled with improved "connectivity", allows the CoP to overcome the obstacles of extensive digital resources (Schuler, 1994).

However, what strongly emerges from the works of Lave/Wenger (1991) and Brown/Duguid (1998) is that knowledge is "social" and "best exchanged face-to-face". Hildreth et al. (2000) discovered that the development of relationships between members in a physical environment helps with issues of identity, and that members feel that they get to know one another better and more quickly than if they develop a relationship via *e-media*. Indeed, face-to-face meetings are extremely important in order to establish real communication within the CoP - which is based on trust, while trust, which develops over time and with human contacts, is necessary before any effective communication can succeed via electronic form (Peltonen/Lämsä, 2004). Moreover, the tacit knowledge embedded in CoPs' day-to-day work is much less appropriate for a capture-codify-store approach (Kimble et al., 2001). Furthermore, knowledge cannot be separated from people and the situation (Sierhuis/Clancey, 1997), and "information stored in explicit ways is only a small part of the picture, and knowing is primarily something which comes about by "real human" participation in communities" (Wenger, 1998). For these reasons, IT infrastructure should merely be viewed as a storage and communication tool for data, information, and explicit knowledge related to the community's practice. IT has made codified knowledge storage effective, economical and convenient, but "it is not the total answer to transfer the entirety of knowledge developed in CoPs" (Perez, 2002).

***Public face-to-face meetings*:** Lesser/Everest (2001) assert that the main point of holding *public meetings* – apart from exchanging knowledge and insights – is for

individuals to get to know other members of the community and “develop a sense of trust and mutual obligation that is critical to encourage contribution among individuals” for the development or sharing of practices. For McDermott (2001), public meetings offer members the opportunity to openly ask for help, and to offer their help to solve technical problems. Consequently, the help exchanged between themselves makes it easier for CoP members to reveal their weak and strong points, and hence learn together in the CoP’s *public space*. Apprenticeship works by being integrated into social participation (Wenger, 1996). McDermott (2001) adds that frank and supportive public discussions about problems should build a greater sense of connection and trust between the members of the CoP. Subsequent to this “public” sharing of ideas and experiences, members develop “a shared way of doing things, a set of common practices, and a greater sense of common purpose” (McDermott, 2001). Wenger (1998) observes that meeting publicly builds a sense of commonality, enthusiasm and trust within the community, and adds that these meetings “give the community a sense of history and a possibility of progress”, which wouldn’t occur if these public events didn’t exist. These meetings help build the community’s the ongoing energy (McDermott, 2001), and can be held within the organization, or even outside the organization, as *forums* involving members of other organizations who are all interested in the same topic.

Public meetings provide a “safe environment” in which community members can launch new ideas or ask difficult practice-related questions, without experiencing pressure from their day-to-day work (Graham et a., 1998; McDermott, 1999). Wenger et al. (2002) regard public community events as merely “ritualistic”, but feel that they serve a substantive purpose: members exchange tips, ideas, tools, explore new ideas, techniques etc.

Lesser/Everest (2001) focus on training sessions given to CoP members, which they regard as “meetings with a high degree of interaction”, and are enhancers of contact-building between individuals - allowing individuals to cultivate stronger relations. These sessions can also be held by a training unit, which is a group of individuals external to the CoP who are responsible for training and coaching CoP members (especially the core members) to ensure the constant development of the community (Vestal, 2003). The training unit is partially responsibile for the community’s education and skills development by providing a recommended set of training courses related to a specific practice, as well as providing members of the community with mentoring and support

(Lesser/Everest, 2001). During these training and learning meetings, “after action reviews” can be conducted with the CoP members (Graham et al. 1998), which fosters strong interaction and pressure-less sharing of insights between individuals, thus enabling learning to take place collectively (Garvin, 2000).
Encouraging practice-related knowledge sharing via formal meetings is not the only way the CoP coordinator (or core members, or the formal organization) can build the social capital necessary to effectively share knowledge within the community. Interactivity between the members can be leveraged through regular informal meetings, such as “brown-bag lunches” (Lesser/Everest, 2001), or even outside-work activities, as long as the organization allows the members sufficient time to get together (Graham et al., 1998; Lesser/Everest, 2001).

b) Private Community Space: Wenger et al. (2002) state that a common mistake that CoPs make, is to focus put too much on “public” events. The coordinator should rather build a “one-to-one networking” between meetings by dropping in on community members to discuss their current technical problems and linking them to helpful resources, inside or outside the CoP. It is in *informal* meetings that work gets done (Wenger, 1996). Even though the community’s topic may be very scientific or theoretical, “it is the human connections that build a base for effective knowledge sharing” (McDermott, 2001). Numerous scholars have intimately linked the building- of one-to-one relations between CoP members to the notions of *care* and *trust*. To allow *trust building* to develop between a network’s individuals, members have to meet *face to face* and get to know one another to understand one another’s skills and behavior (Jarvenpaa/Leidner, 1998). Jarvenpaa/Leidner (1998) add that trust must be built on “predictability of behavior”, and not on “fear of being punished”. Von Krogh (1998) argues that “care gives rise to mutual trust, active empathy, access to help, lenience in judgment, and courage”, which he states are five essential dimensions of behavior in relations. Liedtka (1999) defines “caring” as the ability to “take the perspective of the other, to understand their meaning, and to provide both challenge and support to facilitate their growth”. Von Krogh (1998) provides two interesting insights concerning *trust* that are applicable to one-to-one relations in CoPs, First, to enhance trust, “one should show consistent behavior towards the other person, over a period of time (with a minimum of surprise)”. Secondly, a certain degree of trust is established in the

person with whom you interact, and this degree of trust compensates for the knowledge you lack.

Indeed, trust between CoP members is a pre-requisite for tacit knowledge to pass from one member to another, and these “private”, one-to-one relations allow a deeper exchange of knowledge and problem-solving (Wenger et al.; 2002).

To express this idea, Büchel/Raub (2002) stress that “building trust is the foundation of knowledge generation within networks”. In order to build and diffuse a common sense of trust amongst the entire network or community, effort needs to first be put into constructing one-on-one, trusting relations between members (McDermott, 2001; Büchel/Raub, 2002). Gongla/Rizzuto (2001) maintain that trust and loyalty between members should be built at the community’s very early stage. They claim that the emergence and development of trust and loyalty are positively linked to the rapidity with which gaps in common understanding are identified and addressed. The authors (2001) furthermore add that the initial one-to-one connections between the members have a higher probability of leading to trusting relations if they include members’ curiosity and will to learn about one another; the ability to network and associate similar and dissimilar ideas, and the aptitude to learn to talk to one another using words in the same way, thus building a common vocabulary and a common understanding.

Barlett/Ghoshal (1998) feel that building a trust-based culture that supports organizational learning requires common values and beliefs “that bond diverse organizational members in a shared commitment”. The authors also stress that trust can only last if the members feel that the organizational processes are “inherently fair”.

Simple reciprocity between CoP members is underlined by Hildreth et al. (2000) who underlined two main observations from their study of CoPs:. First, close relationships between community members are essential to give them confidence in what they receive from each other, be it information, the solution to a problem, or even an opinion on some particular point. Furthermore, stronger personal relationships lead to a greater feeling of unity and common purpose, which foster trust amongst members. Second, relations develop more rapidly when the speed at which the interaction occur is high, which explains why face-to-face and telephone discussions were their subjects’ preferred medias, because bandwidth problems don’t occur.

McDermott (2001) believes that “real” connections, caring for each other’s thinking, and sufficient trust between members, which allows them to ask one another for help

as well as to share “half-baked” ideas, lie at the heart of knowledge sharing between CoP members.

Kimble et al. (2001) underline the importance of participation in daily face-to-face interaction - which also occurs informally between members during public meetings – to enable relations to build quicker and go further, and in order to accelerate trust-building amongst CoP members. When members trust one another, “they gain legitimation in each other’s eyes” (Kimble et al., 2001). Trust between CoP members is also a means of enhancing the level of optimism and of commitment regarding the community’s common task, which in turn enable the creation of individual capabilities within the CoP (Liedtka, 1999).

What you should know by now

- Best practice enhancement is an ongoing process. A best practice is not static, but should constantly evolve over time, aspiring to become an even-better practice.
- The most common reason for companies to transfer their knowledge internally is to transfer best or exemplary practices. The other main reason is to increase employee capabilities[2].
- Organizations attempt to transfer their best practices as a way of putting their knowledge into action, in order to learn better and faster, which results in lower costs, higher revenues, and a definite competitive advantage[3].
- Global organizations are, through informal knowledge sharing and managed networks, transferring and leveraging best practices to develop better business processes and save millions of US dollars in operating costs[4].

[2] American Productivity & Quality Centre (1996)

[3] Eliott/O’Dell (1999)

[4] Ellis (2001)

- A community of practice is a group of employees who share a common interest for a defined subject, and who exchange information and knowledge across and beyond organizational boundaries, with a motivation to develop new knowledge or best practices[5].

- CoPs focus on practical aspects of a practice[6].

- A best practice can become even greater when replicated across common communities of practices[7].

- CoPs imply a shared practice between it members, and exist in any organization. Because membership is based on participation rather than on official status, these communities are not bound by organizational affiliations; they can span institutional structure and hierarchies[8].

[5] Wenger et al. (2002)

[6] McDermott (2001)

[7] Wolford (1999)

[8] Wenger (1998)

III) Model building and developing research hypothesis

This chapter is segmented into two sections: III.1 presents the research model and an explanation of how it was built with regard to existing theory, while III.2 describes the development and presentation of the research hypotheses related to the model.

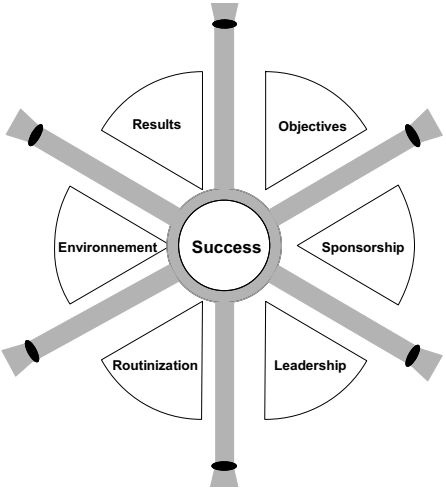
III.1) Presentation of the research model

The following model developed by the author relates a set of *a priori* constructs (success factors) related to communities of practice. The model was tested, in order to analyze and understand 1) how important each factor is for the success of the CoP and deduce different configurations of CoPs, and 2) how each factor impacts the development and sharing of best practices.

A CoP is defined as successful when its members develop and actively multiply practices among themselves (McDermott, 2004). One of the aims of this study is to prove that the 6 *a priori* constructs (or "success factors") derived from various researchs (often partial) and from existing CoP models are indeed important for the "overall" success of a CoP. Thus, the author seeks to discover if there are particular configurations of these factors which lead CoPs to succeed. The author also seeks to discover and understand the most salient determinants of each one of the 6 success factors of the initial research model.

As a reminder, these factors were collected into an initial model, and here is briefly specified what the literature mentions in connection with these success factors:

Figure 9: Initial research model: Steering wheel to manage CoPs



If members of a COP have *clear objectives*, they are willing to participate in it more actively (McDermott, 2003). Several authors mention the importance of the phenomenon of *routinization of activities* in triggering networks to share information and knowledge among members (Maznevski & Chudoba, 2000). According to the *American Productivity & Quality Center* (1999), *leadership* is the most critical factor in the success of the COP. According to the research of Millen et al. (2002), an *environment of trust and devoid of risk* for the members is a condition for human interaction and productivity of the COP. According to a study carried out by the *American Productivity & Quality Center* (2001) within 15 companies, lack *of top management support* constitutes the second most critical factor of COP failure. Wenger and Snyder (2000) recommend the support of an "official sponsor" on behalf of top management to provide the COP with the necessary time and financial resources. For Büchel and Raub (2002), *measuring tangible results* of a network is the most important factor for success, but also the most difficult to implement. For McDermott (2001) the "tangible results" of a COP are reflected in the performance of the organization; more specifically, in reducing operational costs and development time for products and/or services.

Explanation of the model's constructs and their relation to existing theory

In what follows, the *a priori* constructs (or "success factors") elaborated by the author are presented into more details. These constructs are broken up into their constituent parts, as a mean to "descend the ladder of abstraction", and, for instance, become explorable devices integrated into questionnaire items (Seale, 1999).

Construct 1: Clear objectives

The construct *clear objectives* applied to the context of CoPs can be defined by the following approaches:

Graham's (1968) research points out that department or group objectives are "clear" when:

- they serve as a priority system above opposing interests;
- they serve as standards according to which accomplishments can be compared;
- they make the decentralization of authority possible by allowing jointly held objectives to serve as coordinators, and
- group members tend to participate in group activities because they perceive group goals as more or less satisfying their individual needs.

Jamieson (1973) insists that "objectives be written, active, and operational subdivisions of a goal that are well defined and measurable in their accomplishment".
For Howell (1970), setting objectives must be done according to three dimensions:

1) Performance appraisal – where a number of key indicators must be set to keep track of performance achievement. For Denny (1979), the indicators to quantify objectives are cost, quantity, quality, and time.
2) Integration of the organization's objectives with the managers' objectives.
3) Long-range and strategic planning, meaning that the objectives must be focused on specific aspects of the business which are, or have potential of being, profitable for the organization; the objectives must quantitatively translate expected results.

For Denny (1979), objectives should be set only in the areas where results really count for managers and employees, under the constraint however, that they keep in line with the strategy that is set by top management. The author adds that in order to be “clear”, the objective must communicate where you are going, at what rate, and when you expect to get there; reviews of these objectives - done at scheduled or random intervals – allow members of the organization to keep track of the strategic direction the company is following, and to maintain their comprehension of the objectives. The author specifies that this helps strengthen the employees’ degree of participation. Sutherland (1979) stresses the importance, however, of breaking the broad criteria to quantify objectives into more detailed categories – in order to make it clearer for managers and employees what is the performance which is really expected from the objective. The author specifies that these sub-categories of the objective must be quantified according to relevant measurement criteria, in order to later on correctly assess whether the objective was achived effectively and efficiently – and ultimately report it into a performance evaluation system.

Management guru Peter Drucker (1954, 1974, 1986) stresses that an objective is “clear” if the three following questions can be answered precisely: *who* will accomplish the objective?, *when* will the objective be completed?, and *how* will the objective be evaluated? (by what measures exactly).
Commarmond/Exiga (2002) claim that a “clear” objective pictures the goal to achieve, calls for employee’s energy to positively react to it, and is a point of reference to assess its’ own achievement. The authors add that the more the objective is made tangible – thanks to quantitative and qualitative operational goals to achieve – the more it mobilizes energy from employees to achieve it. They claim that an objective must clarify *what* is the result to achieve, *when* it must be achieved, *for whom* it is, *who* is responsible for its achievement, *why* it must be achieved – specify the context - , *according to what indicators will it be measured*, and if possible *how* it will be achieved (propose a method). To sum up, the authors admit that to be “clear” and operational an objective must specify in details the *quantitative* indicators that are used to measure the expected result, as well as the detailed *qualitative* descriptions of the expected result.

Construct 2: Sponsorship

The construct is based on Büchel/Raub's (2002) statement according to which there is a need to "have an executive committee member to chair a network".
Wenger/Snyder (2000) stress the importance of having an "official sponsor", preferably from the top management, who works with the community leaders to provide the CoP with *resources (time and money)* for its activities, and to make sure these activities are in line with those of the formal organization; in other words, that the activities of the network *conform with the business/corporate strategies* (Büchel/Raub, 2002). For Büchel/Raub (2002), management support should aim at *encouraging participation* in the network by budgeting "a certain number of man-days for network participation (as an explicit procedure to build skills and knowledge for their business)" as well as "contributing resources to sustain the proper functioning of a network (ie: resources for building a communication & information technology infrastructure for hosting events, or for covering travel and other expenses occasioned by network activities)". These two points are in line with Wenger et al's view (2002) according to which top management should demonstrate that it "legitimizes community participation". They clearly state that management support for CoPs should include the providing of: guidance, funds, visibility, and legitimacy. The authors conclude by claiming that top management should primarily "protect nascent CoPs from the need to show immediate value" to give them the time needed to experiment and generate viable practices.

According to Büchel/Raub (2002), the network sponsor should "nurture existing relationships between network members or foster the establishment of new links between people". This statement is analogue to Wenger et al's (2002) view when they claim that top management should "advertise" the benefits of the CoP to other members of the organization, who may then join and contribute to its activities. O'Dell/Grayson (1998) stress that management support also includes "diffusing a culture of best practice transfer throughout the organization" which should encourage the continuation of the CoPs activities. The authors add that management support also implies having the CoPs' success stories told at each top executive meeting, so that ongoing support is nurtured; and trying to abolish the "not-invented-here" syndrome in the organization, so that transfer/sharing of best practices is encouraged.

Finally, the authors believe that the managements' attention to and recognition of the CoP's activity, accomplishments, and members motivate the latter to pursue the development and sharing of their practices, as well as fostering an effective utilization of these practices in the organization. This research, however, also aims at discovering if there is an optimal degree of management implication that interacts positively with *psychological safety* (Edmondson, 1999) of CoP members. The logic might be that if management puts too much emphasis on the outcomes of the CoP, the psychological safety might diminish, because the members feel threatened by the eventual consequences of not delivering results. On the other hand, if the management has too little interest, the CoP might lack a "sparkle" that boosts the development and sharing of best practices.

Construct 3: Leadership

The building of this construct is primarily based on the statement according to which the most critical success factor of the community is the skill of the community leader (American Productivity & Quality Centre, 1999; McDermott, 2004).
The following characteristics of a CoP leader were pulled out of the works of several scholars, and are the constituent parts of the leadership construct which were empirically tested:
The CoP leader dedicates between 20% and 50% of his working time to the advancement and supervision of CoP activity (Wenger et al. 2002). He also identifies important, or "burning issues" (McDermott, 2001; Büchel/Raub, 2002), and takes responsibility for the overall vitality and effectiveness of the CoP (Lesser/Everest, 2001). According to Wenger et al (2002), the leader plans and facilitates CoP events, which is the most visible aspect of his role. The leader prepares, animates and leads CoP meetings (McDermott, 2001), responds regularly to the members' queries and keep them updated with information from external sources (Wenger/Snyder, 2000). He also informally link members, crossing boundaries between organizational units and brokering knowledge assets (McDermott, 2001; Wenger et al, 2002), such as "walking the halls" of the organization to connect the CoP members –intervening between the members at the "private space" level (Gongla/Rizzuto, 2001; McDermott, 2001). The leader lays the groundwork for effective cooperation within the confines of the network

by fostering trust (Büchel/Raub, 2002), and manages the boundary between the CoP and the formal organization, such as teams and other organizational units (Wenger et al, 2002). For Wenger et al (2002), the CoP leader fosters the development of CoP members, and helps build the practice by means of expanding the knowledge base, recording lessons learned, best practices, developing tools and methods, and organizing learning events. Finally, he promotes the value of the CoP to the formal organization (Lesser/Everest, 2001), and assesses the health of the community and evaluates its contribution to the organization's members (Wenger et al, 2002).

Construct 4: Routinization of activities

Several scholars have manifested their interest in the routinization phenomenon in team and network theory (Maznevski/Chudoba, 2000; Büchel/Raub, 2002) and in CoPs theory (Wenger et al, 2002; McDermott, 2001), as an activator for information and knowledge sharing within networks.

A sine qua non *regularity factor* is introduced in the "routinization" that Büchel/Raub (2002) depict as a construct that includes regular, focused face-to-face meetings that take place and respect the "combination of several contact patterns" that the meeting's participants maintain. Wenger et al (2002) and McDermott (2001) complete the routinization construct by emphasizing the necessity of having a "rhythm of community events" formalized in a "community agenda" and including events such as: regular meetings, teleconferences, web site activities, informal lunches etc. For Wenger et al (2002), "the events give the CoP a beat around which other activities find their rhythm". Maznevski/Chudoba (2000) clearly point out the point of establishing a "network heartbeat" when claiming that "a network heartbeat has shown to make a difference in terms of team performance". The authors agree, however, that the challenge of the "routinization of activities" is to find the right beat/tempo. Wenger et al. (2002) affirm that when the beat is strong and rhythmic, the CoP "has a sense of movement and liveliness". The authors also agree that when the beat is too rapid, people feel overwhelmed, and when the rhythm is too slow, the CoP feels "sluggish". Büchel/Raub (2002) make it clear that "the key point is that a steady predefined rhythm drives the network's activities, not the other way round".

Construct 5: Risk-free environment

According to Millen et al. (2002), a risk-free environment is necessary in order to have human interactions within the CoP, and for it to be productive. The construct *risk-free environment* is notably prevalent in the *team literature* and is defined as a "sense of confidence that the team will not embarrass, reject, or punish someone for speaking up" (Edmondson, 1999). The author refers to the concept as "psychological safety". He adds that confidence comes from mutual respect and trust among team members. The importance of trust as a "facilitator for information and knowledge exchange and collective action" has also been depicted in the social network theory by Reagans/Zuckermann (2001) and Coleman (1988).

The construct includes the notion of "safety in relations", defined by Cross/ Parker/Pruzak/ /Borgatti (2001) as a "code of ethics that explicitly states that every employee has the right to talk to any other employee". The idea behind this statement is that the community sometimes offers its members a safer place in which they may express words and feelings more freely than in their formal working unit.

McDermott (2001) points out the importance of a "private space" for the CoP participants where they can cultivate trust, and exchange ideas, knowledge, and insights. Büchel/Raub (2002) add that trust is the foundation of knowledge generation within networks and that "accepting the contributions and suggestions of other network members requires trust in each individual's expertise".

They conclude by stating that fostering trust between members is the second most important activity "and the second most difficult activity to implement, after demonstrating tangible network outcomes".

Construct 6: CoP results

The choice of the construct is based on the statement of Büchel/Raub (2002), according to whom "demonstrating tangible outcomes is the most important factor and the most difficult to implement in networks". When stressing the importance of demonstrating tangible outcome, they insist on putting emphasis on the quality of the practice being developed in the network. McDermott (2001), on the other hand, in his research on "measuring the impact of communities", translates tangible outcomes into

"business results". Indeed, he claims that the ultimate test of community value is the degree to which communities contribute to overall *business performance*, such as "reducing operating costs, shortening product development time or increasing market penetration". Filippini et al (1998) regard tangible outcomes as visible through the 3 measures used to assess *best practice performance*:

1) An *economic measure* that shows the ratio between the cost of utilization and the revenue (or the cost savings) generated by the utilization of the practice.
2) A *quality measure* that combines quality consistency (conformity to required specifications) and quality capability (positioning regarding performance and practice reputation in relation to competitors).
3) A *time measure* that presumes that a practice respects punctuality, and is executed according to a timeframe that complies with the practice's complexity.

In accordance with the views of the above-mentioned scholars, the construct of *illustrate community outcomes* implies demonstrating the following variables linked to the practice: an increase in revenues, reduction in costs, quality consistency, quality capability, and punctuality.

The idea behind this construct is that by regularly reviewing the practice's progress and by illustrating its achieved performances, community leaders motivate the participants for their tasks and reassure them about the value of their CoP membership, and the community's *raison d'être*. This in turn keeps the members convinced and active in the development and sharing of their practices. As McDermott (2001) pointed out: "if the CoP does not prove valuable quickly, people drop out".

III.2) Development and presentation of the research hypotheses

The 6 constructs of the research model are linked to "success of the CoP" by a set of research hypotheses. The hypotheses are empirically tested in order to better measure and understand the importance each construct may have on success (best practice development and multiplication (sharing) amongst CoP members).
The hypotheses were built on the basis of the relevant academic literature. Following Strauss and Corbin's (1990) approach to grounded theory, existing theory was used to *guide* the research. The research hypotheses were therefore built by linking different theoretical concepts rather than referring to an existing set of pre-formulated hypotheses in the academic literature to conduct the investigation (Strauss/Corbin, 1990; Glaser, 1992).

III.2.1) Linking existing theory to the research hypotheses

III.2.1.1) Towards the 1st research hypothesis – related to CoP objectives

Wenger et al (2002) assume that CoP members are willing to invest more energy in the community if the CoP's objectives are clearly formulated, and if they serve the members' interests. They also claim that CoP objectives have to be in line with the organization's strategy, in order for top management to recognize the CoP as legitimate and support its activity on a long-term basis.

Furthermore, the importance of setting clear objectives for a community of practice is in line with the necessity to ensure the convergence of the group members' interests. This is required in order to nurture innovation in a specific environment, and to develop knowledge (Probst et al, 1998). Whitney (1994) found that highly performing groups with clear and ambitious objectives are more cohesive than those assigned simple objectives. Collective consensus on the setting of group objectives supports cohesion and collaboration between members, which enables them to reach their common goals (Whitney, 1994; Sullivan/Feltz, 2001). In a study of worker groups, Klein (1996) found that when collective objectives are perceived as more important than individual

objectives, work pressure tends to stimulate group cooperation and cohesion, because common challenges can be surmounted collectively.
From Latham/Stewart's work (1981) it emerges that when setting and framing objectives, managers or group leaders often encounter challenges such as: phrasing objectives with clarity and precision; obtaining "measurable" objectives; relating individual units to divisional and corporate objectives; setting challenging but realistic objectives; avoiding the setting of "comfortable" objectives, and avoiding an overemphasis on more easily measured production goals.

Corbett/Van Wassenhove (1993) propose three generic indicators to measure the *performance* linked to an objective: *costs* ***(a)***, *time* ***(b)*** and *quality* ***(c)***. According to Filippini et al. (1998), the literature shows that there is no consensus in the determination of performance, since each scholar has defined and developed his own set of performance types, and "in many pieces of research, the performance types of quality, delivery time, punctuality, production costs and flexibility are considered". Key indicators have to be observed and followed in order to assess performance (Bogan/English, 1994; Kaplan/Norton, 1996).

Consequently, this author expects to find that:

H1: Setting clear objectives leads the CoP to success (best practice development and sharing between members across organizational units).

III.2.1.2) Towards the 2nd research hypothesis – related to CoP results

a) Difficulties in measuring the value of best practices

Numerous authors stress the importance of measuring the *value* of a best practice, and translating it into *monetary terms* (Wolford, 1999; Jarrar/Zairi, 2000).
Kaplan/Norton (1996) state that "what cannot be measured cannot be managed", which supposes that the purpose of a practice is to show quantifiable results. According to Bogan/English (1994), managers have observed the same general truth across a multitude of industries: what gets measured *is* what gets managed.

Jarrar/Zairi's (2000) define a "proven best practice" as a technique, technology, methodology, procedure, or process that has been implemented and has improved the organization's business results. Eliott/O'Dell (1999) claim that "measurement is the least developed aspect of knowledge management and best practice transfer efforts", and suggest that the best way to measure the impact of such efforts is "not by gauging the size of a company's knowledge base but, rather, the effect it has on the company's performance".

With reference to the *American Productivity & Quality Center's* definition (1999) of a best practice as "those practices that have shown to produce superior results…", the question is raised: in what sense do these "superior results" translate into *value*? When assigning a *value* to a best practice, one can postulate that superior results translate into higher revenues (due to, for example, higher volumes of sales, or higher price), or cost cuttings. In other words, the *value* of the best practice translates concretely into *monetary* value.

A concrete illustration of superior results in monetary terms is provided by Wolford (1999) through the *Canadian Pacific Railroad* case. More than 10 years ago, the company developed an expert system (technical practice) to predict component failure in diesel locomotive engines - the system has improved the overall performance on the railroad effecting cost savings in excess of $3 million, *Higher value* can therefore only be achieved through *higher performance*.
A second concrete example is the "Do it Right the First Time Program" implemented at *Hoffmann-LaRoche* in 1992. The drug approval process (practice) was consistently improved so that drugs could enter the market more rapidly, which improved the company's revenue flow (in O'Dell/Grayson, 1998).
The previous examples show that the *value* of a practice becomes visible through improved financial results. According to O'Dell/Grayson (1998), there are two types of measurements that have to be implemented when assessing the value of a best practice: the effective performance of the practice, and measuring the impact of the best practice transfer. The previous concrete examples therefore only represent the tip of the iceberg; they don't explain anything the *performance of the practice* itself, or the *performance of the transfer process* (which enables the practice to obtain financial results as rapidly as possible).

Scholars have also stressed the importance for managers to measure the *performance of the practice itself* (Bogan/English, 1994).

Andersen et al. (1999) and Admiraal/van Helden (2003) suggest that an *operating performance perspective*, an *innovative perspective*, and a *financial perspective* have to be conjunctly observed in the assessment of a best practice. However, they agree that value materializes in financial results (an increase in revenue/cost cutting) that are directly linked to the practice's performance.

Consequently, Filippini et al. (1998) propose three generic measures that can be applied to assess a best practice's performance, whether the practice is rather "technical", or rather "social": an *economic measure*, a *quality measure*, a *time measure* (for details on each measure, see sub-section III.1.1, construct 3A).

Noha (1993) states that the best practice's *qualitative* aspects have to be considered in order to predict the *quantitative* financial benefits that it will generate for the company - cost reductions and/or an increase in revenues.

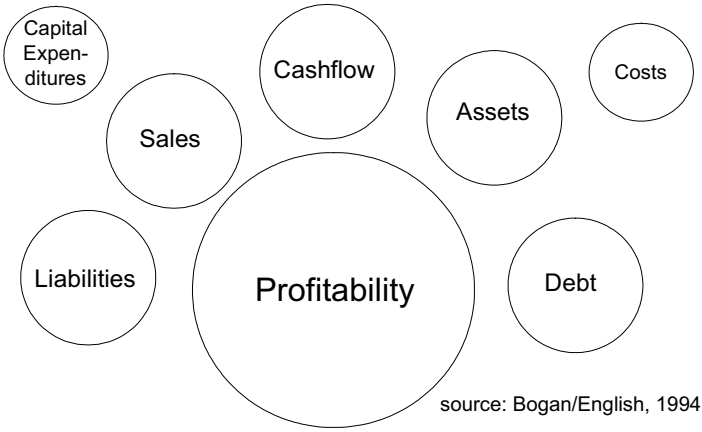
According to Taninecz (1997) and Kwiecien/Wolford (2001), a practice's *qualitative* aspects specifically provide *time reduction* in respect of the realization of certain operations, or of "cycle time". The authors claim that this time reduction is, in turn, translated into *cost cutting*, which positively impacts the organization's financial benefits.

Bogan/English (1994), Johnston (1997), and O'Dell/Grayson (1998) attach the notions of *effectiveness* ("do things right") and *efficiency* ("do the right thing") to a best practice's performance. These scholars claim that the *effectiveness* of the practice should generate additional revenues, because the product/service gains time when entering the market quicker. In addition, the *efficiency* of the practice translates into cost cutting, which in turn also positively affects the company's financial benefits. The practice's performance gives the practice a measurable value: the money that it, in comparison to similar practices, saves the company (effectiveness) added to the additional revenues generated through the practice's improved effectiveness. In other words, the swifter the entrance of the product/service to the market leads to quicker revenue inflows for the company (Bogan/English, 1994; Johnston, 1997; O'Dell/ Grayson, 1998).

So far, a practice's performance and the value it delivers to the company have been associated with financial results. However, Eccles (1991) suggests that financial

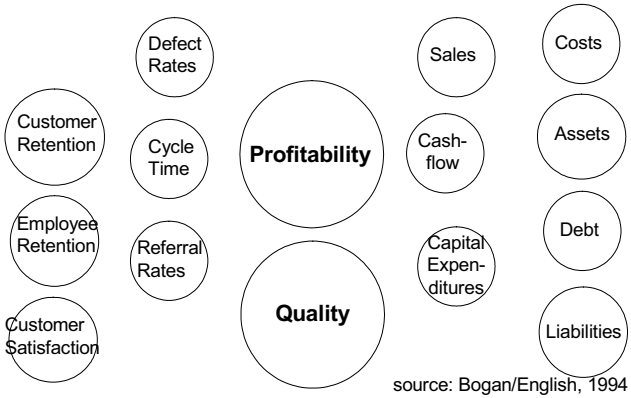
measures usually represent outcomes of processes, although they do not always provide the best information about "what actually occurs behind the scenes of the processes – or how these processes are related to one another in the big picture". In keeping with Eccles's view (1991) - and in order to assess a practice's value - Bogan/English (1994) propose that benchmarks be established by measuring performance in respect of work process speed, quality, employee turnover, reliability, productivity, innovation, training, employee involvement, and learning. In other words, a practice's value should also be determined by considering non-financial indicators (or benchmarks). To this effect, New (1992) suggests that performance areas need to be better defined. According to Bogan/English (1994), there has been a shift in the performance measures used to gauge a best practice's value. The previously strong focus on financial indicators (*profitability*) has moved towards performance measures focusing on non-financial indicators, in other words, quality, customer retention, employee retention, and customer satisfaction. If these non-financial indicators perform well in the long term, they deliver profitability, because they are translatable into financial data. The dashboards illustrated in figures 10 and 11 show the shift in tendencies as far as the importance allocated to various performance indicators is concerned (moving from figure 10 to figure 11):

Figure 10: The dashboard of old performance measures



source: Bogan/English, 1994

Figure 11: The dashboard of new performance measures



source: Bogan/English, 1994

Focusing not merely on *profitability*, but on *quality* as well, there is a logical reason for measuring a practice's value: the *quality* of the process is a variable that should preferably be directly controlled in order to influence the practice's outcomes, which will eventually translate into financial benefits (Eccles, 1991).

Taninecz (1997) points out that improving a practice's performance is strongly correlated to the training of employees, which allows the practice to be deployed more optimally, and therefore increases its value in monetary terms.

A solution – illustrate how CoPs create value

For O'Neill et al. (1998), "legitimacy becomes a driving factor in innovation diffusion across organizations". The authors claim there is a risk that even though a unit has developed a best practice, "other units of the organization might reject it as long as the practice has not proved to be "best"". Arthur (1989) views the problem from another angle by claiming that historical, regulatory, and economic factors may have, by chance, provided early benefits to one practice, thus generating increasing returns and "locking out" other practices even though they might be superior.

Gibbert/Krause (2000) (in Davenport/Probst, 2000: 93) argue that it must be made clear that the best practice being transferred will bring value to their users in the

organization. This supposes that this value can be measured (American Productivity & Quality Centre, 1997, 1998; Probst et al., 1998; Kwiecien/Wolford, 2001).

O'Dell/Grayson (1998) admit that the current *measurement systems* to discover if networks add value to the sharing of best practices are still embryonic, and include the following three points: "[R]eports of higher sales or more satisfied customers as a result of sharing of knowledge and best practices". The cycle times in respect of the implementation of best practices – does the network approach speed up the average 27-month implementation of the transfer process as established by Szulanski (1994)? Knowing whether or not the growth in the number of "virtual" teams and networks in the organization is positively correlated with an increase in practice transfer – the danger here being that *activity* is mistaken for *effective results*.

Vestal (2003) mentions that CoPs are expected to produce measurable results that benefit the company. He adds that members discover ideas, and benchmark practices that help them and the organization save money, time or effort. Hanley (1998) regards delivering value to the organization, through knowledge sharing and using it to develop better practices, as one of the main tasks of a CoP. McMaster (2003) compares CoPs to "communities of commitment", in which members share the commitment of having the knowledge and practice that are "applied, effective, and produce results that forward the interests of the whole", and in which the developed practices "are focused on performance". The author furthermore adds that "CoPs allow for processes which are dramatically more effective than ordinary work practices". McDermott (2001) stresses that CoPs are driven by the sharing of knowledge, insights, information, and ideas that will help the organization save time and money, due to "cycle time reduction" and "quality improvement".
In his previous research, McDermott (1999) had pointed out that it only makes sense for a company to encourage the building up of CoPs that are focused on topics that are of strategic importance to the organization, if the aim is to leverage knowledge effectively and generate value in monetary terms. Snyder/Wenger (2000) claim that at the organizational level, CoPs generate value by solving problems quickly, which in turn decreases costs for the company and enhances customers' satisfaction and retention by rapidly identifying the right expert to provide the best answer to a client's problem (Hanley, 1998). They also generate value by transferring best practices

across the company, and maximizing opportunities to decrease costs and/or increase revenues.

Associating CoPs with a "faster learning approach", Fontaine (2001) distinguishes between CoPs' short-term and long-term value creation for an organization. In the *short term*, CoPs improve business outcomes, notably due to the *time saved* and *cost reductions*, the direct use of *operational benchmarks*, and the *synergies* leveraged across units. In the *long term*, and notably due to *benchmarking* against the rest of the industry, CoPs develop *organizational capabilities* that allow for *faster practice development*, *successful practice exchange and utilization*, leading to *higher revenues* for the company.

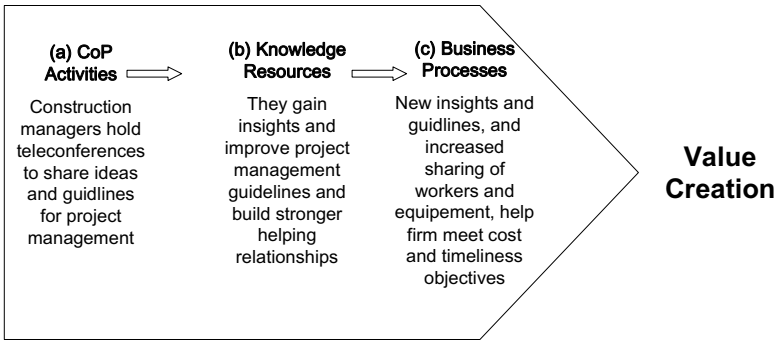
In their study on "building knowledge-creating value networks", Büchel/Raub (2002) stress the difficulties of demonstrating a network's tangible outcomes, even though they claim that "networks may boost efficiency and innovation" within the organization. O'Dell/Grayson (1998) state that it is easy to measure a best practice's effectiveness: simply track the *improvement results* in terms of *time*, *costs*, and *revenues* (value). However, they do admit that it is difficult to assess this value in respect of communities, since it is difficult to measure the CoPs' precise contribution. Indeed, they claim, "measures become weaker and more hazy when you ask about the value of internal networks", in the sense that with a growing number of practice networks popping up all over organizations, they run the potential risk of mistaking activity for effective results. Lesser/Storck (2001) suggest that a future direction for community research would be "to measure the effectiveness of various social capital activities with respect to organizational performance", which they call "return on investment of organizational interventions". As an example, they suggest measuring how effective "community stories", or face-to-face meetings are in enabling members to better understand the context of best practices in other parts of the organization, so that further best practices can be developed and transferred, and generate value for the organization (in terms of cost cutting and revenue increase).

Because measurements systems in many companies encounter difficulties in tracking the value associated with the transfer of practices and re-utilization of intellectual capital, the onus is on the community to identify and promote its successes (Hanley, 1998). Wenger et al. (2002) state that the best way to assess the value generated by a CoP is by listening to members' *stories*, which clarify the complex *causality* between *CoP activities* (i.e the initial knowledge-development activity that innovates, learns a

skill, or develops a method) and the *knowledge created* (i.e. the knowledge resource that is effectively generated by this activity, such as a method, a new insight, or relationships), and finally *how this knowledge is applied* (i.e. the process, technique, or method - in fact, the practice) through which performance is achieved, and value is consequently created.

Figure 12 below illustrates how this *cause-to-effect model* is applied by Wenger et al. (2002) in a CoP's *knowledge value system* (the model has been elaborated, using the example of a CoP of "construction managers").

Figure 12: Knowledge Value System



Template for building value creation:
(a) what did the CoP do?
(b) what knowledge resources did they produce?
(c) how did those applied obtain results?

Source: Wenger et al. (2002)

Snyder/Wenger (2000) point out the importance of applying measures (indicators) that allow the organization to concretely assess the community's achieved performances and the value they create with that performance. The question that arises is: how can the amount of *created value* that can be attributed to the CoP be determined with certainty? Wenger et al. (2002) are clear about this point, stating that the *"return on investment in communities"* can only be *estimated* by taking three variables into account that are included in the *formula*:

Numeric value x share of community x degree of certainty = reported savings (or additional revenues)

The example that the authors give is the following: “Consider a $2 million savings, half of which is estimated to come from participating in the community, with a 80 percent confidence in the estimation”:

$2M x 50% x 80% = $800,000 of savings thanks to CoP activity
(estimated created value)

Note: this “value-created” formula can be applied to both cost savings and additional revenues.

Wenger/Snyder (2000) pertinently insist on two particular points. First that the effects of community activities are often delayed and, secondly, that community results generally appear in the work of teams and business units, not in the CoPs themselves. It is therefore often difficult to determine “whether a great idea that surfaced during a community meeting would have bubbled up anyway in a different setting” (Wenger/Snyder, 2000). Wenger/Snyder (2000) and Büchel/Raub (2002) stress the importance of demonstrating tangible network outcomes, but also admit that the complexity makes it very difficult for managers to demonstrate and assess the value of communities. The best way to assess the value of a CoP is by conducting interviews to collect members’ stories, which can clarify the complex relationships between the activities, knowledge, and performance, and help reveal the CoP’s *saved costs* and *increased revenues* in respect of the company (Wenger 1996; Wenger/Snyder, 2000). Telling “success stories” related to a community’s activities is not only a way of transmitting tacit knowledge related to a practice and arriving at a solution to a problem (Wenger, 1996; O’Dell/Grayson, 1998; Hildreth et al., 2000; Kimble et al., 2001; Gongla/Rizzuto, 2001), but it is also a means of fostering excitement by showing the value that the CoP has achieved. It provides members with a sense of achievement to look forward to (Holstrum, 2000; Wenger/Snyder, 2000; Lesser/Everest, 2001). The demonstration of tangible outcomes is the most important factor and the most difficult to implement in networks (Büchel/Raub, 2002), the value

of the transferred and developed best practices across units - by CoPs - must be cultivated within the organization. This may be achieved partly through the *story telling* approach, which underlines the value of the practice itself. Indeed, Wenger et al. (2002) stress that *anecdotal evidence* is a tool to foster practice transfer. A "great story" evolving around the benefits of a best practice transfer can be told to the receiving unit to motivate practice adoption, but the story must be adapted to the corporate or national culture of that receiver (Probst et al., 2003).

Based on the importance of measuring and demonstrating the benefits of multiplying best practices across the units of the organization, this author expects to find that:

H2: Illustrating tangible CoP results leads the CoP to success.

III.2.1.3) Towards the 3rd and 4th research hypothesis – related to sponsorship and leadership

Impact of management practice

A low degree of managerial commitment can be a barrier if managers are not supportive of best practice transfer, and if there is a poor culture of promotion of best practice sharing within the organization (Gibbert/Krause, 2000, in Davenport/Probst, 2000: 95). The authors also state that transfer might not occur if management fails to appoint "sponsors", who take the responsibility for the transfer process, and support it. Gibbert/Krause (2000) (in Davenport/Probst, 2000: 96) suggest that management sometimes fails to propose financial and non-financial incentives for practice transfer, as well as to clearly formulate the transfer objectives; consequently, these shortcomings act as a barrier to practice transfer from the employees side. O'Dell/Grayson (1998) mention that one of the weaknesses could be that the management doesn't generate any leaders who can "champion" the message of best practice sharing throughout the organization. Top management's failure to signal the importance of best practices for the organization also reinforces barriers to practice transfers (O'Dell/Grayson, 1997; American Productivity & Quality Center, 1997; Ashton, 1998). According to Astebro (1995), management's poor commitment can fail

to identify and remedy certain employee weaknesses, such as: a tendency to be late adopters of innovations, low skills, being poor performance achievers, a low perception of their work's importance, and the conviction that innovative practices adoption has little relevance for their job performance. In turn, this lack of management commitment in the receiver unit can act as a barrier to best practice transfer.

Role of top management and leadership

Many authors have stressed the importance of involving top management and outstanding leaders in supporting groups in the process of transferring and developing best practices across units (Jarrar/Zairi, 2000). According to Ashton (1998), visible leadership and management commitment makes best practice transfer and adoption possible, by creating a climate of willingness to identify, share and adopt best practices. The author claims that the transfer of a best practice is "usually driven by a corporate willing to do something better, supported by technology and measured within credible frameworks".

Anzieu/Martin (1994) claim that a lack of leadership support and coordination of group members can lead to frustration within the group. The authors found that this feeling of frustration leads to aggressiveness between members, and between members and a weak leader. Hilb (1999) defines a good leader as being able to recognize a group's core members and appointing them in different roles (promoter, developer, supervisor, controller, advisor, and inventor), in order to lead the group to achieve its tasks. Kramer et al (2001) claim that the support and leadership given to a group contribute to building up strong collective identity within the group., The authors further claim that this increases the level of trust between members, which has a positive impact on group cohesion and performance.

O'Dell/Grayson (1997) maintain that top management should successfully highlight the importance of best practices for the organization and show its commitment to and leadership of the transfer process. For instance, top management should appoint "best practice champions", who are practice specialists and who can facilitate and encourage its transfer, as well as "sponsors", who will support and supervise the transfer process (O'Dell/Grayson, 1997; Gibbert/Krause, 2000, in Davenport/Probst,

2000: 93). Top management should link best practices to the achievement of corporate objectives, and encourage a climate of free and autonomous sharing of best practices related to these objectives (Jarrar/Zairi, 2000).

Top management should also finance a "best practice office" with a "steering committee" within the organization whose main tasks are to store knowledge related to the best practices, who actively promote, establish and coordinate best practice sharing across the organization, identify relevant topics, and offer employees support, who want to form new networks involved in the transfer of best practices (Gibbert/Krause, 2000, in Davenport/Probst, 2000: 97; Probst et al., 2003). The more the best practice is encoded in a standardized process, the more its replication is facilitated, since explicit knowledge is less inclined to leak out during the transfer process than tacit knowledge (Zander/Kogut, 1992, 1995; Szulanski, 1996; Jarrar/ Zairi, 2000; Szulanski/Winter 2002). An IT system is consequently also needed to support the transfer of a practice (Elliott/O'Dell, 1999).

Best practice transfer therefore requires a certain length of time, sponsorship from top management as well as leadership, all of which enhance the chances of the best practice's successful transfer and implementation (American Productivity & Quality Centre, 1997, 1998; Ashton, 1998).

Leadership within the CoP

Wenger/Snyder (2000) stress that a CoP usually has a core of participants "whose passion for the topic energizes the community and who provide intellectual and social leadership". Hence, McDermott (2001) asserts that one of the main management challenges for community leaders is to "develop an active passionate core group" able to transmit its enthusiasm for the topic at different levels of the community, and generate *excitement* for the topic. With regard to this purpose, Wenger (1996) had previously suggested that the CoP should appoint "thought leaders" as soon as possible (possibly from its start), since it "is one of the key ways to build energy in the community". Organizing challenging conferences, inviting controversial speakers, or even inviting community members to special fairs (Wenger et al. 2002) are merely means of generating *excitement* and *enthusiasm*, which assumes that the right "leading people" are on hand to organize these activities. McDermott (2001), for

instance, maintains that “thought leaders” in the CoP give rise to personal challenges for members by “creating a real dialogue about cutting edge issues”, which is a means “of opening to the ideas of others and maintain a thirst for developing the community’s practice”. McDermott (2001) adds that CoP leaders should be vectors (conduits) to foster enthusiasm and excitement within the community and should “regularly visit members, find out what they are working on, refer or introduce them to other community members, bring in new ideas and find opportunities for the community to develop its practice”. Holstrum (2000) approaches the question of generating excitement by claiming that leaders should be able to “renew interests” within the community. Wenger (1996) stresses that the value of members’ participation should be regularly honored by recognizing, celebrating, and publicizing the results and the value of their work achieved within the CoP. This will contribute to maintaining a constant degree of excitement and motivation in their minds and encourage them to pursue the learning related to the practice. The author suggests that one way of doing this is to explore ways of explicitly rewarding community members through a promotion system, “which grants non financial rewards” (such as early access to innovative technology, or business cards that attest to the members’ expertise).

In keeping with the previously mentioned points on the relevance of appointing sponsors and leaders for the management of best practices, this author expects to find that:

H3: Top management sponsorship leads the CoP to success.

H4: Leadership within the CoP leads it to success.

III.2.1.4) Towards the 5th research hypothesis – related to routinization of activities

O'Dell/Grayson (1997) emphasize the necessity of having groups of employees seriously involved in the process of best practice transfer across organizational units. Furthermore, these groups must accomplish this task well (O'Dell/Grayson, 1997). A group, being a complex social system in which interpersonal forces shape members' actions, follows a *stable pattern of relationships* which enable members to coordinate their efforts to achieve goals (Forsyth, 1998). The author specifies that the group should stick together and continue the dynamic process of pursuing its goals and objectives. There is evidence that the more cohesive these groups are, the better their performance will be when accomplishing their tasks (Klein/Mulvey, 1990; Klein, 1996). Cohesive groups have members who are cooperative, supportive of one another and communicate openly (Carless/Paola, 2000). Forsyth (1998) claims that a cohesive group is characterized by members who feel responsible for achieving group results through ongoing interaction, and by low absenteeism at group meetings. Dyce/Cornell (1996) refer to the *group cohesion task* as the extent to which members of a group usually stick to one another and are commited to achieving specific tasks together. Carless/Paola (2000) stress that the group cohesion task strongly impacts cooperation between members and leads to a well-balanced distribution of the workload. Estabrooks/Carron (1999) found that the group cohesion task has an influence on how group members perceive the control they have over their group-work tasks. Dorfman (1984) claims that the link cohesion-performance is more intense than the link performance-cohesion. The intensity of the link cohesion-performance is positively impacted by the members' degree of collaboration (Klein, 1996). Klein (1996) observed that in groups with clear tasks to achieve, cohesion has a higher impact on group performance than in groups with blurred tasks. In addition, Langfred (1998) points out that highly cohesive, task-oriented groups usually perform better than highly cohesive groups that are not task-oriented.

Chidambaram/Bostrom/Wynne (1990) stress that a group should set up routines to strengthen its cohesion and to fulfil its regular tasks. Keller (1986) claims that short physical distances between members increases group cohesion, because they increase interactions between members. Strauss (1997) proved that groups in which members communicate regularly by means of face-to-face contact have a higher

cohesion than groups in which communication is essentially supported by information technology. The author furthermore stresses that groups should organize regular discussions on varied topics, so that the group activity remains vibrant, and is progressively influenced by these discussions. Forsyth (1998) suggests organizing regular feed back sessions during which group members can share their experiences, reflect upon them, and subsequently make decisions regarding further activities.

At the heart of the CoP there is a web of enduring and cohesive relationships between members. However, "the tempo of their interactions is greatly influenced by the rhythm of community events" (Wenger et al., 2002). According to the authors, the CoP "heartbeat" should nevertheless not be too slow in order to prevent the community from becoming sluggish, nor should it be too fast, because members are then in danger of becoming "breathless". A strong and rhythmic tempo needs to be found, so that the community has a sense of movement and liveliness (Wenger et al., 2002). Büchel/Raub (2002) argue that applying a "temporal rhythm" on a network imposes a "much needed element of stability" and routine on its activities. Maznevski/Chudoba (2000) claim that a network's heartbeat has proven to make a difference to its performance. Büchel/Raub (2002) argue that creating a rhythm in the network can be achieved, for example, through regular face-to-face meetings. The authors also claim that "a steady predefined rhythm drives the network's activities, not the other way round".
To create a sense of "continuity" within the CoP, McDermott (2001) suggests that the management of the organization should give staff time to attend community meetings, fund community events, and include community participation in their planning and budgeting activity. Gongla/Rizzuto (2001) assert that even if the community reaches a size it judges appropriate, it must continue recruiting new members, so that the CoP's activities receive "fresh" perspectives and a constant input of "vitality" is introduced into the CoP, preventing its "heartbeat" from slowing down.

Finally, creating a sense of continuity also refers directly on the CoP's main activities of the *development* and *sharing* of practices. A sense of continuity is generated if members reflect upon and self-assess these processes every time they have been completed. The idea is to use a formalized technique to enable participants to regularly "learn-after-doing", allowing and motivating them to execute these ongoing

processes *better* in future. To support the longevity and the *continuous* success of CoPs, Vestal (2003), suggests using *after action reviews (AAR's)* to focus on performance standards, which enables participants of a referred action to openly discover for themselves what happened, why it happened, and how to sustain strength and improve on weaknesses, in order to improve the practice. The establishment of a *temporal rhythm* for the CoP's activity that is related to practices can also be facilitated by *regular* use of *AARs*, comprised of participatory feedback that generates a learning and a problem-solving process. The idea is that no task – in this case, practice development and sharing – is completed until *lessons* have been systematically learned and shared (Garvin, 2000) within the community.

Based on the empirical findings discussed above, this author expects to find that:

H5: Routinization of activities leads the CoP to success.

III.2.1.5) Towards the 6th research hypothesis – related to a risk-free environment

At the context level, Szulanski (1996) underlines the importance of trust that is required between both units for the knowledge transfer to occur.
Davenport/Prusak (1998) point out that the source-receiver relationship can be affected by the "status of the knower" on the receiver's side, and that certain organizational cultures favour a certain type of employee over others, which can lead to a preference for a certain type of knowledge over others. Kramer (1991) and Argote (1999) add to the discussion on this arduous relationship – between the knowledege source and the knowledge receiver (Szulanski, 1996) - by claiming that certain organizational cultures value inter-group competition between internal units by comparing performances. In turn, this acts as a buffer for knowledge sharing across organizational units. The source-receiver relationship during knowledge transfer is rendered equally arduous by geographical distance, since knowledge travels more easily between units that are located in proximity to one another (Galbraith, 1990; Epple et al., 1996; Argote, 1999). Cultural differences also act as barriers to best practice transfer (Kostova, 1996).

Finally, Lewis/Siebold (1996) and Lewis (1997) underline that the transfer of knowledge will not occur if the receiver unit does not obtain insight from the source unit on how the new best practice will affect performance, how it will fit the local culture and its norms, and how much uncertainty it will cause. Hence, Lewis (1999) strongly recommends setting up communication channels, such as groups of employees, between the source and receiver at the beginning of the best practice transfer process, in order to build trust and "secureness" from the start. Lewis (1999) adds that communicating information and a sense of security at the beginning of the transfer is more important than participation and feedback. However, Klein (1996) stresses that there is a risk that intra-group competition between employees could generate a hostile climate and diminish group cohesion. A hostile climate is more probable to develop between members of a group if performance is measured individually rather than collectively (Wageman, 2001), since members then compete against each other to reach higher performance. However, if the collective performance of the group is valued over individual performances, cooperation and cohesion between members will be positively impacted, and this builds challenges that the members have to surmount together (Wageman, 2001). Estabrooks/Carron (1999) found that group cohesion has a significant influence at a socio-emotional level, meaning it increases the satisfaction, pleasure and relaxation that the members get from their collaboration. Carless/Paola (2000) stress that cohesion at a socio-emotional level promotes the viability of a social system, as well as the creativity and interactions that occur within the group's boundaries. Anzieu/Martin (1994) found out that in certain cases socio-emotional cohesion develops feelings of sympathy and security between group members, which in turn creates a favourable environment for learning. Austin (1997) found that the more group members perceive similarities in their respective work interests, the more they have the impression that they can predict the various members' behaviors. The author adds that feelings of insecurity and anxiety are consequently diminished and communication between members occurs in a safer environment, which leads to an active processing of ideas.

According to Hogg (2000), group members need to experience "psychological safety" when they participate in group activities. The author defines the concept as a feeling of self-confidence that members gain through their ongoing interactions with other group members, and which helps them tackle and solve new problems when they take part in group discussions. Psychological safety increases members' desire to adhere to the

collective stereotype and to the social identity of the group (Hogg, 2000). It also increases the members' mutual levels of trust, which in turn has a positive impact on group cohesion and on the achievement of group tasks (Hogg, 2000).
Wenger et al. (2002) approach this point by stating that familiarity should be developed between community members so they can develop the relationships they need to be well connected. McDermott's (1999) general approach claims that familiarity between members as well as the community identity develops naturally over time as a result of helping one another, sharing ideas, and collectively solving problems. Storck/Hill (2001) believe that building a sense of familiarity between members depends primarily on the following success factors:
Fostering a sense of openness within the community by having a "flexible community agenda" that has time free for and encourages face-to-face discussions and social interaction;
Making use of the corporate culture as a means to provide a common vocabulary and values that the members can share, in order to reinforce a sense of common identity;
Developing a feeling of freedom by encouraging members to have candid discussions during meetings. "Zones of safety" should be created in which members can express their ideas and initiatives without fearing the consequences.

At their level of maturity, CoPs "settle into a pattern of regular meetings, teleconferences, projects, and other ongoing activities", leading to familiarity amongst members (Wenger et al., 2002). The authors add that the familiarity of these events "creates a comfort level that invites candid discussions…and a community becomes a "place" where people have the freedom to ask for candid advice". They also claim that the sense of familiarity that develops in the CoP encourages members to share their opinions and try their ideas without repercussion.
In his research on the values of "care" in knowledge creation, von Krogh (1998) suggests that "social events, ranging from informal chats around the water cooler to holiday parties, can have a great effect on organizational relationships". Von Krogh (1998) claims that it is during these types of social events that "difficult personal issues can be discussed and resolved with colleagues", and "time can be allocated to explore the interests of fellow organization members". Indeed, as suggested by McDermott (2001) "it is hard to talk about your problems in front of a lot of people you don't know". Subsequently, a sense of care and of familiarity is cultivated between members of the

community. Familiarity within the community also increases when members show enough joint care by mutually responding to requests "as though it were their job" (Gongla/Rizzuto, 2001). This enables them to gradually feel more comfortable and secure enough to ask for help, support, or advice.

This author thus expects to find that:

H6: A risk-free environment within the CoP leads it to success.

What you should know by now

- The initial research model developed by the author relates a set of *a priori* constructs (success factors) related to communities of practice: sponsorship, leadership, clear objectives, routinization, risk-free environment, CoP results.
- The model was tested, in order to analyze and understand 1) how important each factor is for the success of the CoP and deduce different configurations of CoPs, and 2) how each factor impacts the development and sharing of best practices.
- If members of a CoP have clear objectives, they will participate more actively[9]. The author defined CoP objectives as *clear* if they include performance criteria that steer the CoP towards cost reductions, quality (or quantity) increases, or the saving of time for the organization.
- The support of an "official sponsor" can, on behalf of the top management, provide the CoP with the necessary time and financial resources. The sponsor must also ensure that the CoP's activities remain in line with those of the organization[10].

[9] (McDermott, 2003)

[10] Wenger & Snyder (2000)

- Leadership is a critical factor for a CoP's success. In fact, CoP leaders must commit 20 to 50 percent of their working hours to the promotion and supervision of the COP's activities to ensure that it remains operative[11]. The leaders should be accountable for the degree of CoP member participation[12], and should help members develop their practices by sharing their knowledge[13]. Leaders should also create bonds between the members[14] to enable them to exchange knowledge related to the CoP practice[15].

- Authors[16] stress the importance of the routinization of CoP activities, which they define as the regular organization of meetings, teleconferences, web-based activities, or other informal events to keep the CoP active in knowledge and experience sharing. The CoP should, however, be cultivated without killing it. If the quantity of activities becomes too overwhelming, the members will lose their motivation to participate.

- An environment of trust that is devoid of risks for the members (risk-free environment) is a precondition for CoP interaction and productivity[17]. Such an environment prevails within a group when the members trust that others will neither embarrass nor reject them, nor will they be sanctioned for the ideas that they express[18]. This environment thus includes the concept of "security in the relation," which is defined as the ethical code within a group, according to which employees address one another irrespective of their hierarchical

[11] Wenger et al. (2002)
[12] Lesser & Everest (2001)
[13] McDermott (2001)
[14] McDermott (2001)
[15] Wenger et al. (2002)
[16] Wenger et al. (2002) and McDermott (2001)
[17] Millen et al. (2002)
[18] Edmondson (1999)
[19] Cross et al. (2001)
[20] Büchel & Raub (2002)
[21] McDermott (2002)
[22] McDermott (2002)

position[19]. A CoP is a secure space for members, because they can express ideas and feelings more freely there than in their formal organizational units.

- Showing tangible results from a network is among the most important factors, but also one of the most difficult to implement[20]. A CoP's "tangible results" translate into the organization's performance – more precisely, into a reduction in products/services' operational costs and development time[21]. An increase in these products/services' quality should also be included. A regular demonstration of a CoP's impact on the organization's performance motivates members to continue their involvement[22].

IV) Methodology

This chapter presents the approach that the research at hand followed in four sections: first, placing it at the *ontological level*, and situating it within the poles of two paradigms: the *positivist* and the *constructivist* approaches (section IV.1); thereafter it addresses epistemological concerns regarding knowledge being generated from observations (section IV.2). Indeed, what emerges from the work of Guba/Lincoln (1994) is that the choice of the research approach depends on what kind of insights the researcher expects to draw from his study (epistemological concerns). Consequently, researchers who place themselves in a positivist paradigm most often adopt a *quantitative* approach, whereas those adepts at constructivism choose *qualitative* research methods to conduct their study.

In the next section (IV.3), the choice of the *research design* is discussed. The penultimate section in this chapter, and the final one on the approach, (IV.4) presents the *research setting*: this part provides insight into how the field of investigation was chosen: how many communities of practice were investigated, how the various members of CoPs were selected to fill in the questionnaire and participate in the in-depth interviews.

The final section (IV.5) presents the data analysis, in which the analysis of the data collected through the questionnaires and the interviews with CoP leaders are explained and analyzed.

IV.1) The positivist and constructivist paradigms

One can view these two major paradigms from three different dimensions (Denzin/Lincoln, 1994): an *ontological* (the nature of reality) one, an *epistemological* (how can one know the world?; what is the relationship between the researcher and the known?) one, and a *methodological* (how does the researcher gain insight into the world?) one.

IV.1.1) Positivism

a) At the ontological level: reality is considered pre-defined and can be established *objectively*, meaning that it presents itself in a unique way to all individuals, thus exposing things as they really are (Guba/Lincoln, 1994, in Vassiliadis, 2002: 43). As underlined by Seale (1999), positivists have a commitment to a realm of ideas felt to have a *universal validity*, "located in a world that is independent of local human concerns, though it is ultimately created by human labor". Seale (1999) adds that positivist social scientists attempt to replicate the success of the natural scientists in controlling the natural world; by doing so, they have committed themselves to approaches perceived to be characteristic of natural science".

b) Epistemological implications: observed and analyzed phenomena occurring in the real world and the researcher are *independent* from one another. Phenomena can be observed and analyzed by the researcher, without the observation and analysis being influenced by his own interpretation (Gubrium, 1988, in Rüling, 2002: 102). Nor do the phenomena influence the researchers own interpretation (Guba/Lincoln, 1998). This involves the separation of theories from observable facts "so that the truth of theories can be tested in a world of these independently existing facts" (Seale, 1999). In other words, the implication for the investigator is that he should stand back from the observations he makes of the world around him, so that they don't corrupt his analytical insights.

c) At the methodological level*:* the methodology most commonly used by positivists is therefore *quantitative* research (Vassiliadis, 2002: 43; Rüling, 2002: 99) during which voluminous amounts of data are collected that are clustered, analyzed, and become statistically meaningful. Positivism involves a commitment to value neutrality, as well as a preference for measurement and quantification of observable events; in fact, positivists search for statistical regularities that can be understood as causal laws (Seale, 1999). Indeed, positivistic research aims to "control" and "predict" (Buchanan, 1992, in Seale, 1999: 11), thus orienting the investigator towards "objectivity" in the interpretation of his empirical findings.

d) Criticisms of positivism: Guba/Lincoln (1994) formulate a set of criticisms of positivism, starting with the *context stripping*, which means that the rigorous control of variables is at risk of being done at the expense of relevance. They add that by positioning himself in a positivistic paradigm, the investigator doesn't give himself the opportunity to really discover and understand the reasons and meanings that guide individuals' actions and explain their behavior. They also claim that general data are not applicable to individual cases: even though generalizations might seem correct from a statistical point of view, this does not necessarily imply that it is relevant in explaining individual cases. They also mention a positivistic position's failing to include the "discovery dimension" in inquiry. Finally, an interesting criticism is expressed by Seiffert/Radnitzky (1994, in Vassiliadis, 2002: 43) who claim that the investigator necessarily influences the reality that he observes, implying that his research findings will always include some "subjectivism".

IV.1.2) Constructivism

a) At the ontological level*:a* concise clarification of this "idealist" ontology is given by Rüling (2002) who states that "there is no such thing as a "real" world that can objectively be accessed". He claims that from the constructivist point of view "an observation is nothing more (and nothing less) than a construction in the mind of the observer". Social constructivists don't believe in one single tangible reality, but in multiple constructed realities (Lincoln/Guba, 1985, in Seale, 1999). As Denzin (1996) put it, "there can be no single truth". Vassiliadis (2002: 44), referring to Guba/Lincoln (1994), adds that the mental constructions individuals make "are not more or less "true" in any absolute sense, but simply more or less informed and/or sophisticated".

b) Epistemological implications: for a constructivist, research is not merely a way of generating statistically meaningful findings, but rather a way to help the researcher develop more sophisticated *understandings* of the phenomenon that is being studied (Seale, 1999). The construction of reality is a result of the individual's interaction with the world in which he lives. For social constructivists, individuals construct their own reality and understanding of the world, basing themselves on their own experiences

and social interactions (Guba/Lincoln 1994; Brooks/Brooks, 1999). Guba/Lincoln (1994) maintain that the investigator and the object of investigation are assumed to be interactively linked "so that the "findings" are *literally created* as the investigation proceeds". Consequently, each individual builds up his own "mental models" which he "uses to make sense of his experiences" (Brooks/Brooks, 1999). Von Glasersfeld (1993), on the other hand, promotes "radical constructivism". He claims that a constructivist paradigm starts from the assumption that no matter how knowledge is defined, is in the head of persons. Consequently, he follows, the thinking subject has no alternative but to construct what he or she knows on the basis of his/her own experience; because, he concludes, "what we make of experience constitutes the only world we consciously live in".

c) At the methodological level*:* referring to Guba/Lincoln (1994), according to whom there is a strong relationship between epistemological positions and particular research approaches, Rüling (2002) argues that "constructivist epistemology often goes with the so-called qualitative (or interpretative) methods". Guba/Lincoln (1994) find that the nature of social constructions suggests that "individual constructions can be elicited and refined only through interaction *between and among* investigator and respondents". Thereafter these constructions are interpreted using conventional hermeneutic (interpretative; explanatory) techniques, and "are compared and contrasted through dialectical interchange". Concretely, qualitative methods encompass techniques such as interviews, that can be either semi-structured or open-ended observations, or the use of documents (corporate, historical, biographical etc.). These methods are intended to help the researcher understand and interpret phenomena.

d) Criticisms of constructivism: according to Vassiliadis (2002), a main criticism is that there exists a strong inter-linkage between the researcher and the "research object" assumed. Therefore, the author follows, the scientific findings can never be objective, and "it is the researcher's theory that drives all aspects of his empirical inquiry".

IV.1.3) Positioning of the current research

The predominant ontological position adopted to conduct this research was a constructivist one.

To start off with, the initial research model (see chapter III) was built by compiling *a priori* constructs (6 success factors) that the author of this work believed were suitable for understanding the phenomenon of best practice development and sharing within CoPs. He did not, however, start off from Strauss & Corbin's (1990) grounded theory approach. The research model combines constructs borrowed from the existing literature - which have already been given meaning by other researchers and which allows researchers to use existing theory to guide their research (Locke, 1996). However, the specific compilation of constructs in the model, as well as the links between them are based on the knowledge and experiences "in our head" (Von Glasersfeld, 1993). In that sense, the author is in line with Guba's (1990) *interpretative* position towards reality, "guided by a set of beliefs and feelings about the world and how it should be understood and studied".

The manner in which the author positioned himself to gather insights into the phenomenon of best practice management in CoPs (limited to the development and sharing of best practices in the present investigation) is in line with constructivist epistemology and methodology. The idealistic approach led him to believe that knowledge on the management of best practices in CoPs could be built through his social interaction with practitioners. The methodology is fulfilled by using a dialectical interchange approach (Guba/Lincoln, 1994). The idealist philosophy that was adhered to during the research assumes that what is "real" is a "construction in the minds of individuals" (Lincoln/Guba, 1985). The author of this work is, however, conscious that the constructivist paradigm in which he positions himself is limited by the subjectivity of his interpretation. Indeed, there a no objective observations, only observations "socially situated in the worlds of the observer and the observed" Lincoln/Guba, 1985), and the subjects are seldom able to give full explanations of their actions or intentions. All they can offer are accounts, or stories, about what they did and why" (Denzin/Lincoln, 1998: 24).

Being aware that every experience gathered from subjects is essentially subjective, the author, as an inquirer, has no precise way of knowing if *his* interpretation of what he heard from his subjects conforms precisely with the intended meaning that *the subjects* wanted to confer on their arguments and explanations (Von Glasersfeld, 1993). This evidently presents as many subjective meanings of the different interviewed subjects as there can be. Because of gaps between the subjects' *meanings* and the author's own *understanding of these meanings*, and the gaps between the *different meanings* by *different subjects*, he adopts an *interpretive* approach (hermeneutic; explanatory) towards a subject's answers, using comparisons and highlighting contrasts (Guba/Lincoln, 1994). In that sense, the author if this work conforms to the constructivist position in that "to understand this world of meaning one must interpret it" (Schwandt, 1994).

Altheide/Johnson (1994) argue that it is the respondent's context that provides interpretative meaning: his emotions, history, and experiences shape the meaning he attributes to what he perceives in the world around him. To understand a respondent's subjective meaning, Schutz (1970) suggests simultaneously investigating his everyday actions (in Seale, 1999). As an interpretive inquirer, the author tries to establish a certain interpretation of the meaning of the social action that he observes around him. However, as an inquirer he has no transcendental ground from which to observe the process that he seeks to understand and of which he is "irretrievably a part" (Bauman, 1987, in Schwandt, 1994). Therefore, what he appeals to "as the warrant for this interpretation can only be other interpretations" (Taylor, 1987, in Schwandt, 1994).
As an interpretive inquirer, the author participates "in the very production of meaning via participation in the circle of readings or interpretations" (Gadamer, 1989, in Schwandt, 1994) - delivered through dialectical interchange with practitioners from the communities of practice that he investigated.

Taylor (1987) refers to a "philosophical hermeneutic" approach, which the author of this work also adheres to. It stipulates that if researchers' interpretations of subjects' meanings "seem implausible" or "if they are not understood by our interlocutors", there is no verification procedure to fall back on. In this case, Taylor (1987) suggests simply continuing to offer interpretations, since researchers are in an "interpretative circle" (in Schwandt, 1994). However, there is an "objective validation through a hermeneutic

approach" (Bauman, 1978, Bleicher, 1980, Madison, 1988; in Schwandt, 1994) that is derived from the postulate – to which the author adhered when he conducted his investigation - according to which "meaning is a determinate, object-like entity waiting to be discovered in the mind of a social actor" (Bauman, 1978, Bleicher, 1980, Madison, 1988, in Schwandt, 1994). This postulate requires the researcher and the respondents (CoP leaders) to reach consensus on a *shared meaning*, thus helping the researcher reduce the gap between his meaning and respondent's one.
A positivistic approach proposed by Cannell/Kahn (1954) is referred to at one particular stage of this research. This approach suggests that in the formulation of questions, vocabulary and syntax must offer "the maximum opportunity for complete and accurate communication of ideas between the researcher and the respondent". These authors claim that the language of the question must conform to the vocabulary level of the respondent, and "the choice of language should be made from the shared vocabulary of respondent and researcher" (in Seale, 1999:35). According to these authors, this approach should help reduce variability in meanings.

Social constructivist Fish (1989) claims that reality is the result of the social processes accepted as normal "in a specific context", and "knowledge claims are intelligible and debatable only within a particular context or community" (in Schwandt, 1994). The implication of this statement for the current research is the following: the author had to admit that investigating best practice management *in several different contexts* of *communities of practice* would necessarily lead him to construct different knowledge on best practice management in each of the investigated cases. With "different contexts", different organizations, different sizes of CoPs, different practices, and different sectors (private/public) are meant.

An *in-between* ontological position concerning the interpretation of a best practice, was, however, adopted. The author limited (both for himself as a researcher, and for the interviewed practitioners) the interpretation that can be made of a best practice to the criteria for *performance*: cost reduction/revenue increase; quality consistency/ comparability; respect of punctuality. Therefore, before each interview, the author took time to define what "best" actually means for a practice, in order to prevent the practitioner from giving answers that are too subjective, being based on his own

interpretation of “best”. Indeed, this would introduce huge interpretative bias, and therefore eliminate all possibilities of objectivity in the research.

The in-between ontological position adopted for the interpretation of best practice in the work at hand refers to the following view of reality as explained by Seale (1999): “although we always perceive the world from a particular viewpoint, the world acts back on us to constrain the points of view that are possible”. Seale (1999) claims that this in-between ontological position (“transcendental realism”) is currently adopted in much social research. According to this paradigm, reality *is* admitted to have a certain control on individuals and *does* set objective limits to the individual’s mental constructions. In this sense, the author *does* admit that there is an objective reality that limits the term “best” to the quantitatively measurable variables of *cost/revenue*, *quality*, and *punctuality*.

Referring to Berger/Luckmann’s (1966) work on the social construction of reality, Rüling (2002) links transcendental realism to the fact that social reality is individually and collectively constructed, and at the same time, “objectified through social routines, institutionalization, socialization and the stabilization of patterns of meaning attribution.” Linking this statement to best practice management, the author of the current work thinks that best practices “are real only through a set of construction and sense-making activities which stabilize meaning through the objectivation of routines” (Rüling, 2002), that is to say, in their development and sharing.

Finally, transcendental realism has been viewed by Huberman/Miles (1998) as a paradigm in which social phenomena exist not only in the mind, but in the objective world as well, and “there are some lawful, reasonably stable relationships to be found among them” (in Denzin/Lincoln, 1998). By analogy, the research points out some legal, reasonably stable relationships between different ways best practices are managed (social phenomena) throughout different CoPs. The aggregation of these social phenomena highlights a few objective general recommendations for best practice management that are suitable for and conform to an objective world. Thus, by taking a position in this transcendental but realistic paradigm, it is assumed that *objectively* there are ways to manage best practices in CoPs, and that these ways can be discovered and generalized through observation and the linkage of several cases (described later in V.1).

IV.2) Quantitative and Qualitative research

IV.2.1) Research objective

This research follows a qualitative approach, which was chosen rather than a quantitative one for reasons that are intrinsically related to the exploratory and explanatory nature of the research question: Are there different configurations of CoPs, and *how* can these different CoPs actively develop and share best practices across organizational units? The research intends to present answers to these questions by interpreting the *meaning* (Holstein/Gubriums, 1997; Huberman/Miles, 1998) and the importance that practitioners ascribe to the 6 “success factors” (the 6 *a priori* constructs) in the initial research model (“steering wheel to manage CoPs”).
The research objective is then to discover 1) whether these 6 factors appear in different *patterns* that lead CoPs towards success, and 2) what the *determinants* of success for each of the 6 factors are. When this has been established, the initial research model will have been completed.

IV.2.2) Characteristics of and differences between quantitative and qualitative methods

Quantitative and qualitative methods are used to *understand* a setting investigated by a researcher (Seale, 1999). The type of research method used by the researcher is, however, very often adapted to his epistemological position. For instance, a *realist* positivist will be inclined to use quantitative methods as a means to seek statistical evidence to support truth and generalization, whereas, the *idealistic* constructivist will merely opt for qualitative methods aimed at generating a richer type of data and focusing on interpretive analysis (Denzin/Lincoln, 1994; Rüling, 2002; Seale, 1999). However, as claimed by Erickson (1986, in Janesick 1994), qualitative *method* should not be confused with a qualitative *technique*. In fact, what makes a research *method* interpretive, or qualitative, is a matter of "substantive focus and intent", rather than a "procedure in data collection" (technique). Erickson (1986) gives the example of "narrative description" to support this point. He claims that a quantitative researcher

may very well use this technique and generate a product that is very different "from the one a qualitative researcher would have come up with in the same setting". Erickson (1986) concludes that this qualitative technique of "continuous narrative description" can be efficiently used by investigators with a positivist orientation who can "exclude from research interest the immediate meanings of actions from the authors' point of view". As explained by Janesick (1994), the qualitative researcher designs his study to examine how a set of individuals function in their social setting, in which he knows he will also reside in due time. The qualitative researcher studies this social setting to "understand the meaning of participants' lives on the participants' own terms". Conversely, quantitative research is perfectly "comfortable" in aggregating a large number of individuals without communicating with them face-to-face" (Janesick, 1994). The main thrust of this investigation fits into the *qualitative design* frame that Janesick (1994) depicts as*:* focusing on *understanding a given social setting* (not predicting in respect of that setting); *holistic*, in the sense that it looks at the *whole* picture, but starts with an attempt to *understand the whole*; looking at *relationships within a system*; and, acting at a *personal* and *face-to-face* level with subjects, building knowledge immediately through these interactions.

Examining the main differences between qualitative and quantitative research, also clarifies why this research integrates the qualitative field. Janesick (1994), for instance, points out three major differences between the two approaches:
While *quantitative* research is merely focused on building maximum statistical validity to confer the highest degree of most probable reliable findings (Denzin/Lincoln, 1994), *qualitative* research looks for the participants in the study's meaning and perspectives.
While *quantitative* researchers seek to generalize their findings at a specific point in time (Denzin/Lincoln, 1994; Rüling, 2002), *qualitative* researchers look for relationships between the structures, occurrences, and events over time.
While *quantitative* research aims at constructing the most *general* case (Rüling, 2002), *qualitative* research looks for "points of tension" (Rüling, 2002), attempting to explain the conflicting points of evidence in the case. In other words, it tries to find "the special case".

IV.2.3) Interaction with participants

When establishing first contact with his participants, the author went to some trouble to engender trust and comfort (Gubrium/Holstein, 1997; Rüling, 2002). Indeed, qualitative investigators seek this first *trustful atmosphere* as a means to ensure participants' willingness to "share everything with the researcher" (Janesick, 1994). Consequently, the researcher is better able to “capture the nuance and meaning of each participant's life from the participant's point of view" (Janesick, 1994).

By seeking *understanding* in the various CoP cases that were investigated for this research, the *meaning* that the participants (CoP leaders) attached to success factors (6 *a priori* constructs) for the development and sharing of best practices was analyzed. Most qualitative studies use a combination of participants’ observations, interviews, and document analysis (Janesick, 1994). The author’s qualitative inquiry was done using a qualitative questionnaire (to assess the current state of the CoPs), and face-to-face interviews. The interviews built a dialectic of iteration, analysis, critique, reiteration, reanalysis, and so on “that led (eventually) to a joint construction of a case” (Schwandt, 1994). Internal documents were also consulted as a means to gather supplementary information on the cases under investigation. Marshall / Rossman (1999) support the efficiency of face-to-face interaction in supporting the understanding of human actions. The authors explain that it is impossible to understand human actions without understanding the meaning that participants attribute to those actions: “their thoughts, feelings, beliefs, values, and assumptive worlds”, and that the researcher, therefore, “needs to understand the deeper perspective, captured through face-to-face interaction”. Gubrium/Holstein (1997) argue that interviews (when done properly) confer quality to the study since they are a "dynamic, meaning-making situation", and that the researcher's ability to interpret should facilitate his understanding of the situation.

The construction of cases should be understood as “an attempt to make sense of or to interpret experience”, and its nature and quality depends on the range or scope of information available to a constructor, and “the constructor’s sophistication in dealing with that information” (Guba/Lincoln, 1989, in Schwandt, 1994).

As a qualitative researcher, the author used “inductive” analysis as opposed to the “deductive” fashion to which quantitative researchers adhere, by using techniques that produce "the numerical data presumed to reflect true measures of objective categories" (Altheide/Johnson, 1994). Using inductive analysis means that categories, themes, and patterns come from the data: “the categories that emerge from field notes, documents, and interviews are not necessarily imposed prior to data collection" (Janesick, 1994).

Janesick (1994) stipulates that the researcher should develop a system to code and categorize the data, and that there is "no one best system for analysis". However, to reach such a scope of understanding of a social setting, the researcher must “have the ability to observe behavior and must sharpen the skills necessary for observation and face-to-face interview”, as if he were himself the “research instrument” (Janesick, 1994).

These constructions of cases, elaborated between the author and the respondents (CoP-leaders) for the research at hand are aimed at providing a credible level of understanding of the studied phenomenon in best practice management, under the constraint that these cases encompass relevance with regard to the studied phenomenon (Guba/Lincoln, 1989, in Schwandt, 1994).

IV.2.4) Researcher bias: a qualitative research shortcoming

Approaching the question of researcher bias in qualitative research firstly requires the acceptance that qualitative researchers “accept the fact that research is ideologically driven", and that "there is no bias-free research design" (Janesick, 1994). For Huberman/Miles (1998), the main shortcomings attached to qualitative methods are the following: the data overload encountered by the researcher in the field under investigation; the researcher's bias due to: a first impression impact, his selectivity and overconfidence in some data, his tendency to interpret co-occurrence causally, and a tendency to voluntarily discard information that isn’t in line with the hypothesis that he is trying to prove.

IV.3) Research design

The author's research uses qualitative techniques to collect and analyse data (Miles/Huberman, 1994; Yin, 1994; Eisenhardt, 1989; Seale, 1999; Marshall/Rossman, 1995; Patton, 1990), as well as a quantitative one (Kaufmaun/Rousseeuw, 1990) to analyse part of the data.

More specifically, this research is concerned by CoP leaders' perception on the importance of each of the 6 factors from the initial research model (objectives, results, leadership, sponsorship, routinization, risk-free environment) for the success of their CoP.

To achieve this, the author did a perception analysis (Miles/Huberman, 1994; Seale, 1999) of CoP leaders. To collect data, he used the technique of "elite interviewing" (Marshall/Rossman, 1995: 83) to do it. This method of "elite interviewing" aims at collecting data and perspectives from individuals which are the most informed and experimented with the phenomenon under investigation – in this research, the importance of each factor for the success of the CoP, and a deeper understanding of each one of these factors. Hence, the most appropriate approach seemed to be to collect data amongst CoP leaders, since the latter supposedly hold the best knowledge in connection with the dynamics of their network (McDermott, 2001; Gongla/Rizzuto, 2001; Wenger et al., 2002).
The author of this work chose to focus on the CoP leader to collect data, assuming that he would be the person with the broadest perspective of the CoP's dynamics. Indeed, according to McDermott (2001), Gongla/Rizzuto (2001), Wenger et al. (2002), Büchel/Raub (2002), the leader is the most knowledgeable person in respect of the CoPs' dynamics, since 1) he lays the groundwork for effective cooperation within the confines of the network, 2) informally links members, crossing boundaries between organizational units and brokering knowledge assets, and 3) helps build the practice – including the knowledge base, lessons learned, best practices, tools & methods, and learning events (Lesser/Everest, 2001).

IV.4) Research setting

The author conducted his research with 47 CoP leaders from organizations such as *Siemens, Oracle, IBM, DaimlerChrysler, Holcim, Bearing Point, PriceWaterhouse Coopers, Degussa, SwissRe, World Bank, World Health Organization, United Nations, CERN*. The sampling method was based on maximum variation sampling (Miles/Huberman, 1994: 28).

This method aims at generating maximum meaningful heterogeneity within the study's chosen sample. The author chose to conduct his research using a heterogeneous sample of COPs to yield similarities and differences among cases investigated (Miles & Hubermann, 1994).This method is perfectly in line with Glaser/Strauss's (1967) view according to which a theory-driven sampling is the basis for making a proper selection of what data to focus on and to analyze in qualitative studies (in Rüling, 2002: 107). The author of this work would like to add that his sampling method prepares the ground for interpretive research, since it fulfills a number of the criteria proposed by Marshall/Rossman (1999: 69): a great mix of participants; the presence of structures of interest and differences between these interests; a variety of programs and methods (practices) used by the participants; and the opportunity to cultivate trusting relations with the participants (Patton, 1980).

The decision to conduct the research at hand within a heterogeneous sample (very different types of areas of activities) of CoPs was fostered by the idea to single out generic findings "through an analysis of similarities and differences among the cases" (Rüling, 2002).

A number of CoPs in different areas were purposely selected so that the focus of the investigation would merely be on the phenomenon of best practice development and sharing (success). Investigating success factors for best practice development and sharing *in a multitude of different areas* allows "general findings" on the phenomenon to be discovered. When exploring each success factor, the aim was therefore to replicate and extend the emergent theory on a particular phenomenon by processing it through different settings in order to build a general, refined model that would be applicable across different areas.

The CoPs were not investigated in a pre-defined order. Rather, the author investigated them according to the order in which he was put into contact with a CoP leader and whenever the latter was available to fill in the questionnaire and the author could subsequently have an in-depth interview and enter into a constructive dialogue with the leader. When exploring each one of the 6 success factors, context-specific constraints were purposely excluded, since it enabled the investigation to be focused on one specific phenomenon (Stake, 1994): the dynamics that successfully lead CoPs to develop and share best practices.
An attempt was made to build trust between participants and the author (researcher) by making contact with the participants before they were asked to fill in the questionnaire and answer questions during an interview and creating a sense of comfort through dialogue between the author (researcher) and the participant (Yin, 2003) throughout the interview.
By following this process, there was a reasonable prediction that the collected data would be of quality and credible (Patton, 1980).

A best practice fits into two dimensions in different proportions (see chapter II): a technical and social dimension. The sample chosen for this investigation includes CoPs whose practice is predominantly technical (i.e., a process, a technique, a technology) (Bogan/English, 1994; Probst et al, 2003), as well as CoPs whose practice is essentially social (i.e., management practices used in a methodology, a training program, lessons learned sessions) (Probst et al, 2003). Table 2 presents the organizations that took part in the study, with the name of the investigated CoP(s) in each organization, and a specification of the predominant nature of the practice(s) developed and shared within each CoP (technical and/or social):

Table 2: CoP(s) that took part in the study

Names of the organizations and the CoP(s) investigated	Nature of best practices (technical and/or social): technical = best practices are essentially based on the technical" dimension; technical & social = best practices well-balanced between the technical & social dimensions; social = best practices essentially based on the social dimension.
HOLCIM (Cement Industry) *Investigated CoPs (7)*:	
• "Cement manufacturing general"	• Technical: process
• "Plant maintenance"	• Technical: process
• "Control & electrical processes"	• Technical: process
• "Petcoke" (alternative fuel)	• Technical: process
• "AFR Application on Kiln" (various alternative fuel applications for kilns)	• Technical: process
• "Project Management Approach"	• Technical & social: methodology
• "SafetyNet" (practices for safety at cement plants)	• Technical: process
DEGUSSA (Chemical Industry) *Investigated CoPs (4)*:	
• "Logistics"	• technical: process
• "Small Capital Project Methodology"	• technical & social: methodology
• "Customer Relationship Management"	• social: lessons learned, problem solving methodology
• "Automotive Industry Applications"	• social: lessons learned, problem solving methodology
DAIMLER CHRYSLER (Automobile Industry) *Investigated CoPs (1)*:	
• "Knowledge Management for Tech Clubs"	• social: lessons learned, problem solving methodology
ORACLE (Software Application Industry & Consulting Services) *Investigated CoPs (8)*:	
• "Human Resource Management Systems"	• technical: process
• "Database high availability, Performance and System Management"	• technical: process
• "Knowledge Management"	• technical & social: methodology, lessons

• "Supply Chain Consulting" • "Java/XML Programming" • "Sales/Marketing/e-commerce products" • "Datawarehouse method fast track" • "EPMS Projects" (project management methodology)	learned • technical: process • technical: process • social: lessons learned, problem solving • technical: process • technical & social: methodology
IBM (Software Application Industry & Consulting Services) *Investigated CoPs (2)*: • "Electronics" • "Knowledge Management"	• technical: process • technical & social: methodology, lessons learned
SIEMENS VDO (Automotive Industry) *Investigated CoPs (7)*: • "Knowledge Management" • "Chassis & Car-body Electronics" • "Human Resource Quality Standards Definition" • "Product Life Cycle Management: Strategy & Architecture" • "Lessons Learned" • "Project Management" • "Active Governance of CoPs"	• technical & social: methodology, lessons learned • technical: process • technical: process • technical & social: methodology • social: lessons learned, problem solving • technical & social: methodology • technical & social: lessons learned, problem solving, governance function
PICTET (Bank Industry) *Investigated CoPs (3)*: • "Operations & Logistics" • "Financial Reporting" • "Financial Performance Measurement"	• technical: process • technical: methodology • technical: process/methodology
LOMBARD ODIER DARIER HENTSCH (Bank Industry) *Investigated CoP (1)*: • "Project Management"	• technical & social: methodology

PRICEWATERHOUSE COOPERS (Financial Audit & Consulting Services) *Investigated CoP (1)*: • "Financial Performance Attribution"	• technical: process/methodology
SWISSRE (Re-Insurance Industry) *Investigated CoPs (2)*: • "Knowledge Management" • "Claim Management"	• technical & social: methodology • social: lessons learned, problem solving
WORLDBANK (Public Organization) *Investigated CoP (1)*: • "social funds"	• technical & social: methodology, lessons learned
DELTA (CoP of Medical Doctors) *Investigated CoP (1)*: • "Medical technical and social practices"	• technical & social: process/methodology/ lessons learned/problem solving
CERN (Public Organization) *Investigated CoP (1)*: • "Atlas Project: Process Implementation of Detector"	• technical: process
WORLD HEALTH ORGANIZATION (Public Organization) *Investigated CoP (1)*: • "Medical technical and social practices"	• technical & social: process/methodology/ lessons learned/problem solving
KM4DEV *(Knowledge Management for Development)* **(Public Organization)** *Investigated CoP (1)*: • "Knowledge Management Application in Project Management"	• technical & social: methodology, lessons learned

PRO CONCEPT (Software Industry and Consulting Services) *Investigated CoP (1)*: • "ERP development" (software development)	• technical: process
BEARING POINT (Consulting Services) *Investigated CoP (2)*: • "e-government" (software development and Internet solutions) • "management tools"	• technical: process • technical & social: process, methodology, lessons learned
AGUASAN (Public Organization) *Investigated CoP (1)*: • "Water Supply & Sanitation"	• technical: process
UNITED NATIONS (Public Organization) *Investigated CoP (1)*: • "Information Architecture" (Information Technology)	• technical: process
AIDSWORKERS (Public Organization) *Investigated CoP (1)*: • "Lessons learned in projects for development"	• technical & social: methodology, lessons learned

This variety in practices also made concentrating on the generalizability (Miles/Huberman, 1998; Ragin, 1987) of the findings, in terms of success factors for best practice development and sharing's dynamics, possible. The results of the study must, however, be understood as a valid generalization of the most salient *configurations* and *determinants* of the 6 success factors, found in the 39 successful CoPs (from the 47 investigated CoPs). Since a positivist approach was not adopted for the investigation, the author does not claim that the results statistically represent the entire population of CoPs in organizations. He rather claims that the findings are generalizable to the theory that was tested (the initial research model) (Eisenhardt, 1989; Yin, 1994). By testing the initial model by means of 39 "successful" CoPs provided a well-structured enhanced model that supports a better in-depth

understanding of the success factors for best practice development and sharing's dynamics, as well as a model that can be used for further investigation, and can be re-modeled accordingly.

IV.4.1) Data collection

Data collection was carried out between April 2004 and February 2005.
In a first phase, the 47 leaders received a qualitative questionnaire prepared by McDermott (2004). Using the multitude of qualitative descriptions offered by the leaders, this questionnaire enabled the author to evaluate if a CoP was successful, i.e., if it developed and actively multiplied best practices. The 47 collected questionnaires yielded 39 such successful COPs. At this stage, the author isolated the 8 "unsuccessful" CoPs from the 39 remaining "successful" ones, and focused on the 39 CoPs with success.

In a second phase, the author conducted semi-directed interviews with the 39 leaders of successful CoPs. During the conversations, which lasted at least two hours, he asked the leaders to rate their appreciation of the importance of each success factor for their CoP as "very important", "fairly important", or "not important". For each factor, he asked leaders to support their evaluation with concrete facts from their CoP. Each interview was recorded and then transcribed (Yin, 1994).
For each factor, the author asked the leaders to justify their appreciation with concrete facts that occured in their CoP. During the dialogue, the author asked theory-driven and hypothesis-directed questions, related to the positive impact each success factor (from the initial research model) might have on best practice development and sharing.

In a third phase, the author conducted semi-directed interviews with the 8 leaders of unsuccessful COPs. During the conversations, which also lasted two hours, he asked the leaders to discuss the reasons for their COP's possible failure elements.

To summarize, the study used two data sources: a qualitative questionnaire to assess the current state of each investigated CoP (see Appendix 1) and an in-depth interview (semi-standardized interview) (see Appendix 2). This data collection technique is rooted in a set of broad qualitative genres as set by Marshall/Rossman (1999: 61).These authors suggest using a research strategy adapted to the inquiry's focus, as in table 3:

Table 3: Qualitative genre and overall strategy

Genre	Strategy	Focus of Inquiry
Individually lived experience	In-depth interview	Individuals
Society and culture	Case study	Groups or organizations
Language and communication	Microanalysis	Speech events and interaction

(source: Marshall/Rossman, 1999: 61)

The approach in the current research is an in-depth interview strategy. Indeed, the focus of the inquiry considered individually lived experiences as a CoP leader (individual perspective). By reading (qualitative questionnaire) and listening (in-depth interview) to the narratives of each CoP leader, an understanding was formed of the current state of the CoPs and how experiences with best practice development and sharing had been structured.

The various steps of the investigation

The author approached CoP leaders by meeting them personally in various knowledge management forums/events; through knowledge managers whom he had met at forums, who put him in contact with CoP leaders; and through personal contacts that he had in various organizations, who put him in contact with CoP leaders whom they knew.

He made contact with all of the participants between April 2004 and February 2005. During that first contact – face-to-face, by phone, or by e-mail - he introduced himself as a PhD student and presented the nature of his research. To enhance the chances that CoP leaders would agree to participate in the investigation, he was careful to point

out the benefits that they would obtain from work: the possibility of being informed of the key success factors that prevailed in CoPs in other organizations for the development and sharing of their best practices.

As soon as a CoP leader agreed to participate, data collection was done as follows: The author first sent the questionnaire (via e-mail) to the CoP leader, specifying that a phone (or face-to-face) interview would follow shortly after. As soon as the participant returned the completed questionnaire, he contacted the participant to fix a date and an hour for an in-depth phone interview[23]. The author also took advantage of that conversation to obtain feed-back on the questionnaire, and to have an informal conversation (that mostly evolved around CoPs). The author aimed to increase the level of trust between himself and the respondent through this informal conversation, as a means to increase the respondent's degree of openness regarding the information and knowledge that he would agree to share with the author during their forthcoming interview. The questionnaire made the collecting of primary data possible, in order to get a first understanding of each CoP's overall context (Strauss/Corbin, 1990; Miles/Huberman, 1994; Denzin/Lincoln, 1994) – and assess wheter it was successful or not.

The interview left sufficient time to clarify some of the points that the CoP leader had mentioned and explained in the questionnaire. Clarification was sought of the points that added some value to the understanding of success factors for best practice development and sharing. The well-planned and controlled interview was conducted with the participants after they had completed the qualitative questionnaire to maximize a flow of valid and reliable information from the respondents (Rüling, 2002). Through the interactive dialogue and trust established between the author and the respondents, the latter were encouraged to express some additional opinions that they would have been reluctant to express in a written form. They were also encouraged go deeper into the explanation and exploration of some points that they had only remained generic about in the questionnaire. These statements follow the views of Holstein/Gubrium (1997: 116), according to whom in traditional approaches, subjects

[23] Only if the questionnaire showed that the CoP was successful; if the CoP was unsuccessful, the author contacted the participant to cancel the interview, providing him/her with the appropriate explanations.

are basically conceived as “passive vessels of answers for experiential questions put to respondents by interviewers” The authors add that the subjects are repositories of facts and the related details of experiences”.

Indeed, by adhering to Holstein/Gubrium’s (1997) approach, the author concentrated on the meaning-making character of interviewing. Sticking to this approach, he considered his interviewing as being an interactive achievement that provided him with valuable and reliable data found in narratives of quality. Indeed, as specified by Holstein/Gubrium (1997: 113), the narratives that are produced may be as truncated as forced-choice survey answers or as elaborate as oral life histories, but “they are all constructed *in situ*, as a product of the talk between interview participants”. These authors (1997: 123, 125) stress the role of the qualitative researcher as the activating narrative production in an environment “conducive to the production of the range and complexity of meanings that address relevant issues. They add that within this orientation, the respondent, in collaboration with the interviewer, “activates diverse narrative resources as an integral part of exchanging questions and answers” (in Rüling, 2002). It is therefore through this constructive dialogue with each CoP leader that the author gathered as much insight as possible on the success factors that enabled CoPs to develop and share best practices. This insight that he received into that phenomenon would probably not have been as rich, had the author not adhered to the guiding principle according to which “knowledge of social worlds emerges from the achievement of inter-subjective depth and mutual understanding” (Miller / Glassner, 1997: 106).

Pushing this constructivist view of interviewing even further, the author was motivated by the fact that respondents are not so much repositories of knowledge – “treasuries of information awaiting excavation”, so to speak – as they are “constructors of knowledge in collaboration with interviewers” (Holstein/Gubrium, 1997: 114). Indeed, since the interviewer and the respondent are both active during the interview, “meaning is actively and communicatively assembled in the interview encounter” (Holstein/Gubrium, 1997: 114) – following narrative modes of knowledge creation. During all the semi-structured interviews that the author conducted, he was therefore careful to detect when the respondents were “unlocking” specific knowledge (Nonaka, 1994). He emphasized this emerging knowledge by asking improvised questions that stimulated reflection as a means to further explore the new insights into CoPs’ success factors. During the interview process, the author was, however, careful to

regularly check the relevance of his ideas as they emerged during the conversations with the respondents, as a means to make ensure that he “shared to a reasonable extent the concerns and reality constructions of the participants” (Miller/Glassner, 1997, in Rüling, 2002).
Since each interview was a “give and take” conversation, the author often fed into the dialogue certain specific relevant facts that he had encountered while investigating other CoPs in the study. These “stories” not only motivated the respondents (CoP leaders) to draw analogies with their own CoP, but they also enabled the author to keep as close as possible to the the respondents’ level and language. By adjusting his level of conversation to theirs, the author aimed at stimulating the CoP leaders’ interest in maintaining the integrity of their vision of the phenomenon of best practice development and sharing, and preserving their viewpoint of the phenomena by using the practitioners’ everyday language (Fontana/Frey, 1998).

Following Rüling’s (2002) advice (based on Richardson, 1990), the author was careful to find an equilibrium between keeping a certain distance between the participants’ “cultural stories”, without positioning himself too much on the margin. Had he positioned himself too much on the participants’ perspective, however, he would have lost his researcher objectivity and would have reduced his capacity to ask questions from a global perspective. Had he adopted too much of a neutral position, he would have lost the grasp of the true essence of what the participants were trying to say (Richardson, 1990), and would have voluntarily ignored some very interesting peculiarities specific to certain CoPs.
Following Rüling’s (2002) interview approach, the author signaled his familiarity with best practice management within CoPs to each participant at the beginning of each interview. He stressed his position as a researcher willing to gain more insight into and understanding of the success factors that lead a CoP to develop and share best practices. This enabled each participating CoP leader to take an expert role in which he was strongly motivated to reflect upon and share his own experiences and role (Miller & Glassner, 1997, in Rüling, 2002).

The author feels that it is important to clarify that his knowledge of best practice management in CoPs grew gradually as he interviewed more CoP leaders. According to the grounded approach (Glaser/Strauss, 1967; Strauss/Corbin, 1998), the

knowledge that he gradually acquired of the studied phenomenon re-modeled his set of perceptions on an ongoing basis. Each new interview was therefore conducted with a higher degree of awareness of the phenomenon. This enabled him to not only be more critical of the answers that he received, but also to formulate more specific and targeted questions.

IV.5) Data analysis

The analysis's objective was to **(A)** identify different configurations (patterns) of success factors within CoPs, and to **(B)** understand *how* each of these factors positively impacts best practice development and sharing in each of the CoPs that were investigated. More precisely, the analysis aimed at identifying and understanding the *links* between the success factors and best practices.

Each interview was tape-recorded and transcribed (Yin, 1994), which enabled the author to interpret each leader's discourse by means of a semantic approach (Miles & Huberman, 1994; Patton, 1990; Seale, 1999).

(A) In order to determine whether these success factors' of various *configurations (or patterns)* existed within the 39 CoPs, the author conducted a typological "clustering" analysis (Kaufman / Rousseeuw, 1990). A cluster analysis is an exploratory analysis of data that aims at identifying groups of individuals (in this case CoPs) that "look alike". This typological "cluster" analysis was conducted as follows:

The author first converted the importance that the 39 leaders attributed to each of the 6 factors[24] with regard to their CoP's success into "ordinal data" (Kaufman / Rousseeuw, 1990): 2 = very important ; 1 = fairly important ; 0 = not important. This scale of appreciation followed a ranking approach. As is frequently done in statistics, the author proposed the hypothesis that the distances between the ranks 0, 1, 2 are equal, which enabled him to treat the data as ranks. This enabled him to process the "ordinal" data by means of calculation. The author arranged the entire data set in a (39 x 6) matrix (see Appendix 3) – 39 sets of ordinal data, each set consisting of 6 ordinal

[24] Clear objectives, leadership, sponsorship, routinization, risk-free environment, and results.

values (1 appreciation per success factor). Each CoP was attributed a number between 1 and 39.

The (39 x 6) matrix was then processed through a *dendogram*, which helped the author classify the data into 3 distinct groups (see Appendix 4). To refine his analysis, the author used the method of *partitioning around medoïds*. The medoïds are the CoPs that best represent each of the 3 groups. Statistically speaking, medoïds are the CoPs whose configuration of success factors have 1) minimal dissimilarities with the configurations of other CoPs within the same group (minimum distances between intra-group ordinal data), and 2) maximal dissimilarities with CoPs from the two other groups (maximal distances between extra-group ordinal data). This gave the author his first glimpse of what the 3 successful patterns would look like graphically. Finally, the author aggregated the ordinal data, per group and per success factor, and calculated the average values for each pattern. This led to 3 "successful" CoP patterns (or configurations of success factors) (see figures 17, 18, 19).

(B) Then, in order to analyze each interview and to understand how each one of the 6 initial factors impacts best practice development and sharing, the author relied on Miles/Huberman (1994), who proposed a set of procedures with which to analyze qualitative data. For each CoP, an interview write-up was done which contained a brief description of the CoPs' activities, as well as the results of the interview (from the transcript) and some of the questionnaire points that complemented the interview. Each case write-up was done with respect to the *links* between the 6 success factors and best practice development and sharing. This way, the author gained a deeper understanding of the impact of each one of the 6 success factors on the development and sharing of best practices. The elaboration of these interview write-ups involved a collection of thick descriptions and personal experience stories, which led the author to make sense of what he had been told.

IV.5.1) Between a loose and a tight analysis approach

Following Miles/Hubermans' (1998) approach, the author alternated his research between a loose and a tight continuum:

Table 4: Conditions for application of loose and tight research designs

	Loose designs	Tight designs
Characteristics	Inductively oriented	Deductively approached
Conditions for application	Unfamiliar and/or excessively complex terrain. Single case. Research intent: exploratory, descriptive.	Good prior acquaintance with the setting. Good bank of applicable, well-delineated concepts. Multiple, comparable cases. Research intent: explanatory and/or confirmatory.

Source: Rüling (2002):106 (based on Miles/Huberman, 1998)

A loose approach (inductive) and a tight (deductive) approach were alternately used to investigate each CoP in turn, first as a "single case" CoP, and then to consolidate the results of the multiple cases of CoPs.

Since the author was unfamiliar with the terrain of each investigated CoP, his intent was simultaneously exploratory, descriptive and explanatory. Even though he constantly referred to the 6 success factors to explain the links with best practice development and sharing (explanatory), he left sufficient room in the participants' communication for himself to discover serendipitous findings (Miles/Huberman, 1998) on best practice development and sharing (exploratory).

His position in respect of each CoP investigation was to "look at the field to see how I could explain a phenomenon" (deductive) and at the same time to "look at the field and see what I could find" (inductive) (Rüling, 2002). Indeed, as pointed out by Rüling (2002), loose versus tight research design is not necessarily a question of mutually exclusive approaches, but "refers to the question of doing what at which point in time".

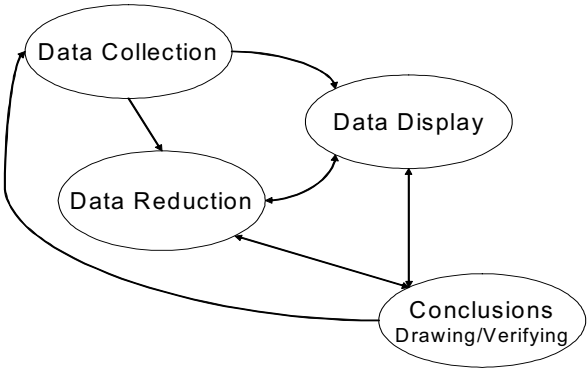
A tight approach was used when the consolidated results of the research was noted: referring to the initial research model ("steering wheel to successfully manage CoPs") and to theoretical considerations, in order to build up an empirically grounded set of

explanations on how success factors effectively lead CoPs towards success. This tight approach (deductive) proved to be very useful when comparing and generalizing the results from each CoP.

IV.5.2) Linking data collection to data analysis

On a broad level, the ongoing analysis of qualitative data is in line with Miles/Huberman's approach (1994). These authors suggest that there is an interactive set of procedures that is common to each individual case as figure 13 illustrates.

Figure 13: Interactive Model of Data Analysis



Source: Miles / Huberman (1994)

Data collection, display, and reduction each play an important role in data analysis, since they pre-define the researcher's conclusions as well as the types of interpretations that can be done subsequently (Miles/Huberman, 1994).
The qualitative data (from questionnaire and interview) collected from the 39 "successful" CoPs were displayed and reduced in the same manner: the interactivity between the data display and data reduction gave birth to a multitude of *aspects* (Marshall/Rossman, 1999: 154) in respect of each CoP case. These *aspects* – found in each case – were the first *links* established between each of the 6 success factors and best practice development and sharing ("conclusions" in the figure above).

The process of collecting data, analyzing it and building *aspects* for each CoP followed an *iterative* approach (Glaser/Strauss, 1967; Eisenhardt, 1989). This means that *aspects* from the previously investigated CoPs were used, and then integrated – when possible - into the semi-structured interview for the investigation of new CoP cases. The evolutionary process of building conclusions (aspects) for each CoP involved constant iteration - backwards and forwards - between periods of data collection and data analysis (Eisenhardt, 1989; Vassiliadis, 2002) in different CoPs.

IV.5.3) Data analysis across a multiplicity of CoPs

When it comes to analyzing a set of cases, Miles/Huberman (1998) warn the researcher about the risk of drifting away from the case-specific context, in an effort to generalize. According to Ragin (1987), the researcher should identify specific configurations across the cases he investigates. Rüling (2002) adds that the researcher then has to subject these configurations to comparative analysis by "looking for underlying similarities and systematic associations". Rüling (2002) claims that most often, researchers form "types" or "families", achieve some form of clustering (along potentially meaningful dimensions), "and find themes that cut across cases". However, Miles/Huberman (1998: 194) claim that the logic of replication brings the risk of "aggregating out the local webs of causality and ending with a smoothed set of generalizations that may not apply to any single case". The following paragraph aims at detailing the various steps of the analysis, as well as clarifying how the risk associated with replication logic was avoided.

Various steps in data analysis

When data collection of the 39 "successful" CoPs was completed, the author again considered all the CoP *aspects* which had emerged from the overall investigation. These aspects were the *links* established between each of the 6 success factors and best practice development and sharing for each investigated CoP. Each aspect was related to one of the 6 success factors. The author extracted these aspects from his notes that he had made by going through every questionnaire, and by listening to the

recordings that he had made of every interview. Concretely, each aspect was formulated in a concise sentence, followed by a detailed explanation of how it had had a positive impact on best practice development and/or sharing. To obtain a global picture of all the aspects in the CoPs, the author then drafted a synopsis of all 39 "successful" CoPs in the form of a conceptually clustered matrix (Miles / Hubermann, 1994: 127) as illustrated in table 5:

Table 5: Conceptually clustered matrix

6 *a priori* constructs (or "success factors")	CoP 1	CoP 2	CoP 3	CoP 4	…	CoP 39
Clear objectives	**Aspect 1.1**: explained link between *a priori* construct and best practice development and/or sharing. **Aspect1.2** **Aspect 1.3**	**Aspect 2.1** ...	**Aspect 3.1** ...	**Aspect 4.1** ...		**Aspect 39.1** ...
Routinization	**Aspect 1.4** ...	...	...	...		...
Leadership	...	...	...	...		...
Risk-free environment	...	...	...	...		...
Sponsorhip	...	...	...	...		...
CoP results	...	...	...	...		...

(Source: Miles/Hubermans, 1994: 127)

This matrix was the basis for the further steps of the analysis.

The following step was to group these *aspects* into *categories* (Marshall/Rossman, 1999: 154). To achieve this, Macus's approach (2002) was followed: in a first step, these *aspects* were labeled "as similar to the original wording as possible", which created a set of *categories* for each of the 39 "successful" CoPs (Dey, 1993, in Macus, 2002). Each category was put in the form of a short descriptive sentence.

In a second step, a *consolidation* was done with the 39 sets of categories "that were semantically identical" (Macus, 2002), which resulted in one single set of 63 *grounded categories*. Each of these 63 *grounded categories* was attached to one of the 6 success factors.

While establishing these 63 *grounded categories*, the author carefully referred to Marshall/Rossman's (1999: 154) statement on analyzing data in a qualitative manner.

According to these authors, the goal of data analysis in qualitative research is not to search for mutually exclusive and exhaustive categories in a statistical sense, but to identify "the salient grounded categories of meaning held by participants in the setting". For Strauss/Corbin (1998), qualitative analysis is defined as "a non-mathematical process of interpretation" which is carried out for the purpose of discovering concepts and relationships in raw data and then "organizing these into a theoretical explanatory scheme".

The 63 grounded categories that were identified within the 39 "successful" CoPs were discovered because of their salient character in the questionnaires and the interviews. Furthermore, the author judged it interesting to integrate this "statistical" aspect into the analysis as he had a relatively high number of CoPs (39). The "statistical weight" of each of the 63 *grounded categories* in the 39 successful CoPs were therefore checked. The author, to make sure that he wasn't falling into the trap of drifting away from the case-specific context in the effort to generalize (Miles / Huberman, 1998), did an *a posteriori check*. Following Glaser/Strauss's (1967) iteractive approach ("back and forth" approach) to qualitative research, he applied each of the 63 *grounded categories* to the 39 single CoP cases "with success" to control whether they fitted into his investigation notes and the aspects which had initially been found for each case. Overall, it was found that 63 *grounded categories* applied to the investigated "successful" CoPs in different proportions: that *grounded category*, which obtained the lowest score, fitted into 13% of all the investigated cases (in 5 CoPs), while the *grounded category*, which obtained the highest score, fitted into 80% of all the "successful" investigated cases (in 31 CoPs). The 63 *grounded categories* were divided via success factors as follows: 10 into sponsorship, 11 into leadership, 11 into clear objectives, 10 into community results, 12 into routinization of activities, and 9 into risk-free environment as illustrated in table 6.

Table 6: Grounded categories by success factor

6 success factors	63 *grounded categories* NB: the number in brackets indicates the number of CoPs that the *grounded category* fits into after the *a posteriori* check.
Sponsorship	• Investments in technology (13) • Investments in "network coordination" (15). • Control that the CoP objectives are in line with corporate strategy (13) • Control that the CoP effectively develops and shares practices that contribute to lower costs and/or increased organization revenues (12) • Have a Governance Committee made up of sponsors and/or CoP leaders,at a higher level to supervise the activity of each CoP in the organization (10) • Sponsor, together with top management, promotes best practice multiplication across the organization (10) • Recognition (or reward system) by sponsor for CoP members who multiply best practices across the organization (8) • High degree of liberty and encouragement conferred by top management to CoP members regarding the sharing of best practices between one another, and with other members of the organization (25) • Top management promotes the benefits - in terms of development and multiplication of best practices – of CoPs throughout the organization on an ongoing basis, (24) • The importance of having top management maintain a "sane" degree of competition (for resources) between business units, in order for CoP members (from different BUs) to be willing to share their best practices with other members of their CoP (from other BUs) (21)
Leadership	• Leader's paternalistic approach (25) • The way CoP members view their leader matters (21) • Leader builds a culture of best practice sharing (21) • Cultivate the relationship between the leader and sponsor (8) • Coordinate members' competences (27) • Divide CoP into sub-topics (22) • Leader adopts a "tele-marketer" approach to connect CoP members: connect knowledge-givers (bid) with knowledge-takers (ask) (25)

	• Leader must know "who knows what" within the CoP (14) • Make CoP more attractive for members and for "CoP stakeholders" (25) • Assign different members to prepare meeting/workshop agenda each time (22) • Balance between the leader's degree of knowledge of the practices developed and shared by the CoP and his/her ongoing readiness to learn more about these practices (27)
Clear objectives	• Objectives are intrinsically linked to specific practice parameters (22) • Objectives are linked to the template on how to develop the practice across the organization (11) • Set quantitative and qualitative benefits to achieve (27) • Include specifications on the way CoP objectives (in terms of practice development and sharing) should be measured (10) • Objectives should be classified in a structured way, and related to specific CoP topics (practices) (14) • Motivation of CoP core members when participating in the elaboration of the CoP objectives (6) • Ongoing revision of objectives by members (5) • Divide the objectives related to the different parts of the developed and shared practice(s) amongst all CoP members (split the share) (5) • Find a balance between top management's strategic interests and members' operational interests (7) • Align CoP objectives with top management's strategic objectives (corporate strategy) (22) • Objectives that will enable CoP members to have a realistic chance to develop and share strategically relevant competencies (7)
CoP results	• Share success stories and cultivate "story-telling" approach to increase development and sharing of best practices (15) • The practices that are developed and shared contribute to lower costs for the organization (14) • The practices that are developed and shared contribute to higher revenues for the organization (13) • The practices that are developed and shared contribute to increased satisfaction for clients (12) • Publicize for the sponsor's benefit the quantified benefits (i.e., cost reduction, revenue increase, effectiveness, rapidity, client satisfaction) that a best practice (developed and shared within the CoP) has brought to the organization (15)

	• Publicize for the CoP core members' benefit the quantified benefits (i.e., cost reduction, revenue increase, effectiveness, rapidity, client satisfaction) that a best practice (developed and shared within the CoP) has brought to the organization (14) • Publicize for the sponsor's benefit the qualitative benefits (i.e., client satisfaction, CoP members' satisfaction, quality of product/service) that a best practice (developed and shared within the CoP) has brought to the organization (14) • Publicize for the CoP core members' benefit the qualitative benefits (i.e. cost reduction, revenue increase, client satisfaction, quality of product/service) that a best practice (developed and shared within the CoP) has brought to the organization (13) • Internal benchmarking of practices by sticking to key indicators (15) • Internal benchmarking of equipment (supporting the best practices) across the organization (group of companies) (11)
Routinization of activities	• Balance between strict regularity of CoP activities and the effective need to discuss relevant topics/practices (27) • Vary places where meetings/workshops take place (discover new best practices at different sites) (27) • Regularly inject external expertise into the CoP (26) • Access to well-documented practices (29) • Members have access to other internal organizational networks (31) • Members have access to other external organizational networks (27) • Operational planning of activities (19) • Overcome main barriers to routinization of activities (18) • Information technology maintains stickiness between CoP members (25) • Members' regular working environment in the organization already encourages knowledge sharing between employees (28) • Frequent face-to-face interaction (27) • Participation in the CoP as a "sense-maker" for members in order to accomplish their daily organizational tasks (20)
Risk-free environment	• CoP as a learning-by-trial-and-error zone for its members (19) • CoP as a buffer zone for its members (21) • CoP as a safety zone for its members (15) • CoP as a comfort zone for its members (18)

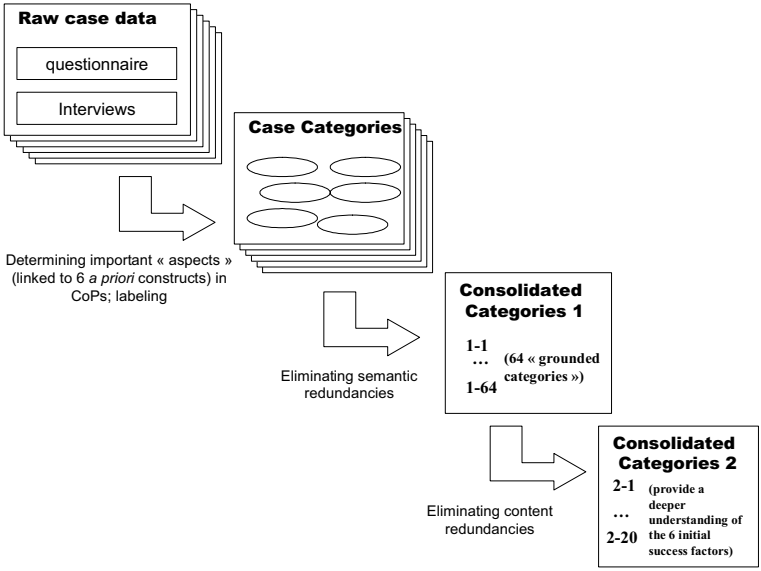
	• Trust between members (38) • Friendship/Informality between members (29) • Thinking "outside the box" is encouraged (32) • No hierarchy-related pressure (25) • Balance between a "no sanction" atmosphere and a business objectives-driven focus (22)

This single set of 63 *grounded categories* still contained a number of redundancies related to content, as well as cross-categories overlaps.

In accordance with Glaser/Strauss's (1967) iterative approach to qualitative research, and following Macus's approach (2002) in an orthodox way, each *grounded category* was analyzed and then compared to the other *grounded categories* – with the same success factor - in order to detect content redundancies. To eliminate these redundancies, some *grounded categories* had to be merged (Dey, 1993). The final result was a set of 20 *non-redundant categories* (Macus, 2002) divided via success factor: 3 for "clear objectives", 4 for "leadership", 4 for "routinization of activities", 3 for "risk-free environment", 5 for "sponsorship", and 1 for "CoP results". These *non-redundant categories* were labeled "determinants of success" by the author.

Figure 14 (Macus, 2002) presents the steps followed to consolidate the raw data from the 39 "successful" CoPs into 20 *non-redundant categories* (*determinants* of success), which enable a deeper understanding of each one of the 6 success factors of the initial research model.

Figure 14: From raw data to consolidated categories



IV.6) The qualitative questionnaire and semi-structured interview

Over the course of his study, the author combined the data collection methods for his investigation (Marshall / Rossman, 1999). Consequently, the limitations in one method could be compensated by the strengths of a complementary one (Marshall / Rossman, 1999) to generate facts, opinions, and insights for each investigated CoP case (Yin, 1994)[25]. Indeed, most of the better investigations rely on a variety of source of evidences (Yin, 1994). He therefore used both a qualitative type of questionnaire (Yin, 1994; Flick, 1998) and a semi-structured interview (Yin, 1994; Merton/Fiske/Kendall, 1990; Punch, 1998; Flick, 1998).

The questionnaire was initially submitted to the CoP leader for each 47 CoP under investigation to gather data of a descriptive nature (Patton, 1980) on the CoP – to assess whether the CoP is successful in developing and sharing best practices (exploratory approach). Subsequently, a semi-structured interview was conducted with the CoP leader of the 39 CoPs that proved "successful" in the qualitative questionnaire to 1) assess the importance of each one of the 6 success factors for the development and sharing of best practices (=success), and to 2) understand how each success factor of the CoP positively impacts the development and sharing of best practices (explanatory approach).

These techniques used for the qualitative inquiry fit into an inductive research strategy, for "generating and confirming theory that emerges from close involvement and direct contact with the empirical world" (Patton, 1980).

IV.6.1) The qualitative type questionnaire

A qualitative questionnaire (see Appendix) was used to identify the current state of success of each investigated CoP. In qualitative research, the researcher should aim at understanding as much as possible of the investigated field's context (Yin, 1994; Eisenhardt, 1989). The descriptions gathered through the questionnaire set the foundations for the main step of inquiry, which was the semi-structured interview.

[25] The interview is "lively", not "static" like the questionnaire. It's interactivity enables the researcher to go deeper into the explanations of the respondent.

The questionnaire was initially developed by McDermott (2004), and was used for the investigation as an exploratory tool. It enabled the author to get a clear picture of the current success of each CoP, before the semi-structured interview followed to test the initial research model. Two questions were added to the initial form; one on benchmarking, and one on risk-free environment. By doing so, the author ensured that the questions covered all 6 of his initial research model's success factors ("Steering wheel to manage CoPs"), and would provide a current description of them.

In order to provide as much clarity as possible for the respondents and specify the context in which the investigation was taking place (Flick, 1998; Patton, 1980), the questionnaire begins with a paragraph that concisely defines the nature of a CoP according to the existing literature (Wenger et al, 2002; McDermott, 2004).
The questionnaire is divided into 3 blocks, containing 23 open-ended questions (Yin, 1994; Flick, 1998; Marshall/Rossman, 1999; Fink, 1995). The 23 questions are based on existing theories of CoPs (Wenger et al, 2002; McDermott, 2004).
The 1st block contains 9 questions related to "general characteristics of the CoP" (Wenger et al, 2002; McDermott, 2004); the 2nd and 3rd respectively on "how the CoP is active" (Wenger et al, 2002; McDermott, 2004) (7 questions) and "how the CoP is being led" (Wenger et al, 2002; McDermott, 2004) (7 questions). The compilation of Blocks 1, 2, and 3 characterizes the "current state of success of the CoP".
Block 1 ("general characteristics of the CoP") asks questions which assess whether the network under investigation is really a CoP, and not a team, a task force, or an informal network (Wenger / Snyder, 2000) - in order to ensure that data were being gathered on the investigation's true subject (Patton, 1980).

In line with a descriptive approach towards data collection (Patton, 1980), each of these 23 open-ended questions asks the respondent to assess the investigated point according to 3 dimensions: weaknesses, strengths, and opportunities (McDermott, 2004). To make sure that the respondents would correctly understand the sense of the 23 questions, a practical illustrative example (Fink, 1995) was attached to each question for the respondents to "preserve the use of their everyday language" (Fontana/Frey, 1998) – and therefore make them feel more comfortable with their reflections and the formulation of their answers instead of forcing them into a theoretical framework imposed by the researcher's academic perception of the world.

Each question enabled the respondent to answer in his own words, and elaborate as much as he wanted to. In reality, the questions are not formulated in a "truly open-ended fashion" (Patton, 1980), since they impose a predetermined set of dimensions to reflect upon. The participants were required to answer each question according to these 3 dimensions to provide a broader set of perspectives of each one of their answers (Maxwell, 1996). This gave the author a better understanding of CoP leaders' perception of the current state of the CoP in terms of what went well in regarding network activity (strengths), what went wrong (weaknesses), and what could still be done to improve the CoP's dynamics and make it more active (opportunities) (McDermott, 2004).

All practical illustrative examples (to illustrate questions and definitions) were developed by McDermott (2004) (an internationally recognized author and consultant for numerous multinational companies in the field of CoPs). The author developed the practical examples based on his experiences as a consultant.
The author met Richard McDermott twice at a Swiss multinational company's headquarters between September and December 2004. He trusted McDermott's practical illustrations to match the meaning of each question, since McDermott has extensive worldwide consulting experience in the field of CoPs, is the co-author of a best-seller in the field (*Cultivating Communities of Practices, 2002*) and regularly publishes in academic journals (e.g. *Knowledge Management Review*).

The questionnaire (see Appendix) begins with an explicit title that evokes the questionnaire's aim (defining the current state of success of the CoP); information on the questionnaire's structure, as well as a space for the respondents to write their names and the name of the CoP they lead; and a definition of a Community of Practice, according to Wenger et al (2002) and McDermott (2004).

This type of descriptive questionnaire served the double purpose of:

1) stimulating the CoP leaders to first reflect deeply on the key characteristics and dynamics of their CoP, and familiarize themselves with the 6 success factors (from the initial research model) from which they were being asked to draw links to best practices in the next step of the study (semi-structured interview).

2) Enabling the author, as a researcher, to obtain a first description of the characteristics of each success factor in the CoP, as well as an overview of the CoP's level of activity. These first insights were valuable since they provided a background that the author could refer to when interviewing each CoP leader in the next step of the inquiry. This first "descriptive" step enabled a first observatory immersion (Yin, 1994) in each CoP under investigation, and allowed the author to familiarize himself with the terminology (Fontana/Frey, 1998) that CoP leaders used to describe their CoP. The knowledge acquired through this *descriptive background* enabled the author to directly focus the discussion during the semi-structured interview that followed on the links between the 6 success factors and best practice development and sharing.

IV.6.2) The semi-structured interview

Numerous constructivist authors (Yin, 1994; Merton/Fiske/Kendall, 1990; Punch, 1998; Flick, 1998; Scheele/Groeben, 1988) have defined a semi-structured interview as a qualitative method used to collect data through the use of open-ended, verbalized questions posed in a specific order to the interviewee.

The semi-structured interview followed a set of *hypothesis-directed* questions (Holstein/Gubrium, 1997; Flick, 1998; Punch, 1998) in the form of 1 set of closed-ended questions related to the importance[26] of each one of the 6 success factors for the success of the CoP, and 1 set of open-ended questions (Patton, 1980) related to the impact of each success factor on the development and sharing of best practices. The respondents' answers assumed a conversational manner (Marshall / Rossman, 1999; Yin, 1984). The semi-structured interview, that was conducted with each of the 39 CoP leaders (39 CoPs with success) contained questions that were aimed at generating answers providing an understanding of *how* each of the 6 success factors could have a positive impact on best practice development and sharing. Insights into the phenomenon of investigation were discovered through conversations led in an iterative fashion.

[26] "very important", "fairly important", "not important".

For terminology purposes, each interview began with a short discussion between the researcher (the author) and the interviewee (CoP leader) on best practices.
Before the author started asking the CoP leader questions about the importance of each success factor for the CoP, and on *how* each success factors could positively impact development and sharing of best practices, he started off by clarifying what he exactly meant with best practice, using *theory-driven* explanations (Punch, 1998). He then asked the respondent to talk to him *descriptively* (Patton, 1980) about the meaning that he as a practitioner attached to a best practice.
This approach ensured that, as far as possible, the *meanings* that each respondent attributed to success factors for the development and sharing of best practices were constructed according to the theoretical considerations that they had previously been given (Denzin, 1989; Miller/Glasner, 1997; Fontana/Frey, 1998).

The approach, more precisely, focused on Scheele/Groeben's (1988) elaboration of semi-structured interviews aimed at the reconstruction of subjective theories hidden in the interviewee's mind (Schele/Groeben, 1988, 1990). Referring to this terminology, Flick (1998) states that "the term "subjective theory" refers to the fact that the interviewee has a complex stock of knowledge about the topic under study. This knowledge includes assumptions that are explicit and immediate and which he can express spontaneously in answering an open question".
According to this perspective, the questions to the CoP leaders aimed at being as explicit as possible. In other words, to make sure that the investigated link between the 6 success factors and best practices was clear to the respondents in order to have the interviewee's implicit knowledge of that link express itself in the most explicit form (Holstein/Gubrium, 1997; Flick, 1998). The assumptions that were made in the questions were presented to the interviewee, which he could accept or refuse "according to whether they correspond to his or her subjective theory or not" (Scheele/Groeben, 1988: 35-36).
The semi-structured nature of the interview allows greater flexibility, and the different respondents' perceptions, meanings, definitions of situations and constructions of reality to be collected (Punch, 1998), rather than merely collecting pre-defined answers as quantitative surveys usually do (Churchill / Iacobucci, 2002). A focused or semi-structured questionnaire therefore allows the researcher to gain as many different perspectives of and insights into the topic of best practice development and

sharing, as there are respondents. In other words, although the interview pursues a structured line of inquiry with a stream of sequenced specific open-ended questions, it aims at generating diversity in the answers, rather than rigidity (Rubin/Rubin, 1995). Open-ended questions allowed the author, as a researcher, to gain mere facts of a matter, and opinions about events, considered as a basis for further inquiry (Yin, 2003). This suggests that as a researcher, the author gained mere insight into the impacts that these 6 success factors may have on the development and sharing of best practices, thanks to the diverse experiences and opinions gathered from the interviewed practitioners. Furthermore, his knowledge of the investigated topic increased as the number of interviews increased (Patton, 1980); consequently, his increased knowledge of the topic facilitated further interpretation of the respondents' meanings as the study developed.

IV.6.3) Questionnaire pre-testing

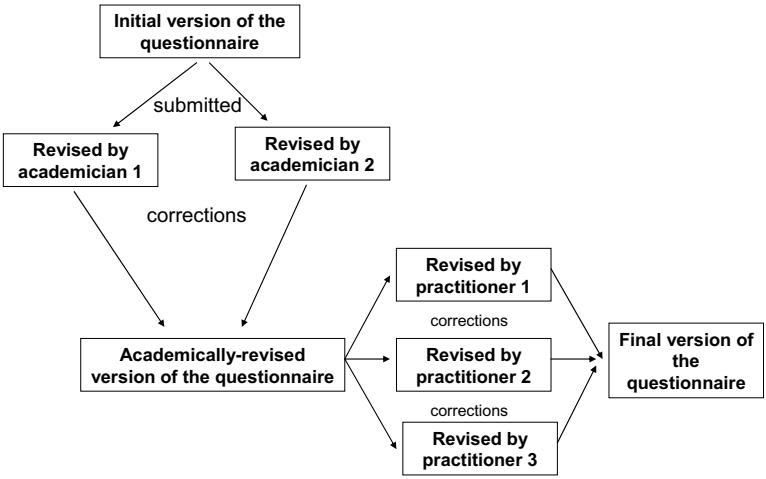
The purpose of the pre-testing is to reduce the ambiguity of the qualitative questionnaire (Churchill, 1999). Using a small sample of five respondents, a first version of the questionnaire was tested to eliminate omissions, inconsistencies and ambiguity (Aaker/Kumar/Day, 2001; Churchill/Iacobucci, 2002) before fully deploying it in the investigated CoPs. This testing period was divided into two phases.

The first phase witnessed the first version of the questionnaire being independently revised by two academics, both holders of a PhD in the field of *Organizational Science*. Their revision enabled inconsistencies in the questions that the author had added to McDermott's initial version (2004) of the questionnaire to be eliminated. Of the 5 questions that had initially been added to the questionnaire, only two were kept – a question on benchmarking and a question on the risk-free environment - and re-modeled according to the academics' suggestions.

During the second phase, this revised qualitative questionnaire was sent to three practitioners within one CoP, who "closely matched the profile of the intended final target" (Raisch, 2004: 150). These informants provided a detailed feedback that the author used to refine the two supplementary questions, and to reword some parts to better reflect the practitioners' language. Wording, sequence, syntax, and structure were modified to make the questions even more comprehensible, until the

questionnaire reached its final form (Punch, 1998; Aaker/Kumar/Day, 2001; Churchill/Iacobucci, 2002).

Figure 15: Testing the questionnaire



IV.6.4) Semi-structured interview pre-testing

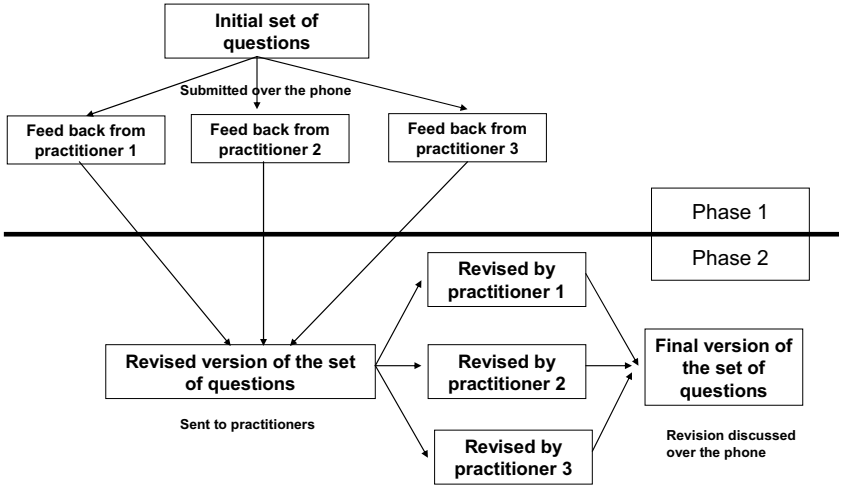
The semi-structured interview was tested only once the qualitative questionnaire had gone through the whole process of revision, and reached its final form.
The interview pre-testing was done in two phases:

The 1st phase comprised 3 distinct semi-structured interviews with each of the 3 practitioners who had participated in the pre-testing process of the qualitative questionnaire. They were asked to also test the semi-structured interview to simulate an identical context of the field investigation: the respondents being submitted to the qualitative questionnaire were also the ones to subsequently undergo the semi-structured interview.
They were posed a set of 1 closed-ended questions and 8 open-ended questions by phone, and this pre-test semi-structured interview usually lasted 45 minutes. During

each interview, the author received insights into the difficulties each respondent expressed regarding the questions' wording and meaning. Following the order of the 3 pre-testing interviews, the questions were rearranged or reworded in an iterative fashion to clarify their meaning better and make them easier to answer.

During the 2nd phase, the revised version of the set of questions was sent to the same respondents. The author then conducted a phone meeting with each of them, during which they provided detailed feedback on each question's clarity of meaning. Consequently, the final wording, sequence, syntax, and structure were formalized in a final version of the semi-structured interview.

Figure 16: Testing the semi-structured interview



IV.6.5) Strengths and weaknesses of theory building from a multiplicity of CoP cases

Eisenhardt (1989) briefly enumerates a set of *strengths* and *weaknesses* in building theory from different contexts – in the case of this thesis, leaders from different CoPs.

Referring to Cameron/Quinn (1988) and to Bartunek (1988), she explains that the *first strength* in respect of theory building is related to *creativity*: Creativity emerged in the mind of the author when he went through the process of trying to reconcile the contradictions that he found in the CoP cases. This reconciliation led him to "reframe his perceptions into a new gestalt", which means that during the investigation he was forced to constantly reframe his theoretical assumptions into a “revised” theoretical vision. Hence, this continuous process of juxtaposing contradicting realities found across CoPs tended to “unfreeze” the author's thinking, and forced him to reshape the theory he was building under the constraints of these observed contradictions. Because the author went through the ongoing process of analyzing, understanding, and explaining contradictions between CoPs, this process had the potential to "generate theory with less researcher bias than theory built from incremental studies or armchair, axiomatic deduction" (Eisenhardt, 1989).
A *second strength* is a consequence of this *flexibility in the investigator's mind*: the resultant theory is very likely to be empirically valid. The reason for this, Eisenhardt (1989) explains, is because the theory-building process is so intimately tied with evidence, “it is very likely that the resultant theory will be consistent with empirical observation”. Eisenhardt adds that this intimate interaction with actual evidence often produces theory “which closely mirrors reality".

The *first weakness* pointed out by Eisenhardt (1989) is the *risk that investigations conducted in many different contexts generate overly complex theory*. This often happens because the researcher is tempted to capture everything from the very rich volume of data, forgetting about the element of *parsimony* that characterizes good theory. What results from that is "a theory which is very rich in details, but lacks the simplicity of overall perspective" (Eisenhardt, 1989). According to Eisenhardt, this could be explained by the fact that researchers lack quantitative measures, such as regression results or observations across multiple cases under investigation, and therefore may be unable to assess which relationships are the most important and which ones are simply idiosyncratic to a particular case.
The *second weakness* pointed out by Eisenhardt (1989) is the *risk that investigations conducted in many different contexts generate narrow and idiosyncratic theory*. She explains that this happens because this type of theory is a bottom up approach where the specifics of data produce the generalizations of theory; therefore the risks are that

the theory describes a very idiosyncratic phenomenon or “that the theorist is unable to raise the level of generality of the theory".

What you should know by now

Sample of investigation	47 leaders from a heterogeneous sample of 47 COPs (« maximum variation sampling », Miles/Huberman, 1994).
Purpose of the investigation	Study leaders' perception of the importance of each of the 6 key factors for the success of their CoP, in order to identify the configurations of success factors.
Investigation method	Questionnaire and interviews with the elites (leaders) of CoPs (Marshall/Rossman, 1995 : 83).
Data collection	**Phase 1**: Qualitative questionnaire distributed to the 47 leaders to evaluate the success of their CoP. The answers showed that 39 CoPs were successful, against 8 CoPs that were unsuccessful. **Phase 2** : Semi-directive interviews with the leaders of the 39 successful CoPs to assess the importance of each key factor for success and to fully understand how each CoP is managed. **Phase 3**: Semi-directive interviews with the leaders of the 8 unsuccessful CoPs to discover the main reasons of failure.
Data analysis	• Semantic interpretation of all 47 leader's discourse (Miles/Huberman, 1994 ; Seale, 1999). • Conversion of the importance that the 39 leaders attributed to each of the 6 factors[27] with regard to their CoP's success into “ordinal data” (Kaufman/Rousseeuw, 1990): 2 = very important; 1 = fairly important; 0 = not important. • Typological “clustering” analysis (Kaufman & Rousseeuw, 1990) in order to determine whether there are various *configurations* of success factors within the 39 CoPs
Field of investigation	Siemens, DaimlerChrysler, Oracle, IBM, PriceWaterhouse Coopers, Bearing Point, SwissRe, Pioneer, Mazda, Mitsubishi, Holcim, Degussa, World Bank, CERN (European Organization for Nuclear Research), United Nations, World Health Organization, International Labor Office, Knowledge Management for Development (KM4Dev), Aguasan, Aidsworkers, Delta Medical Network, Pictet Bank, Lombard Odier Darier Hentsch Bank, Pro Concept.

[27] Clear objectives, leadership, sponsorship, routinization, risk-free environment, and results.

V) Research findings

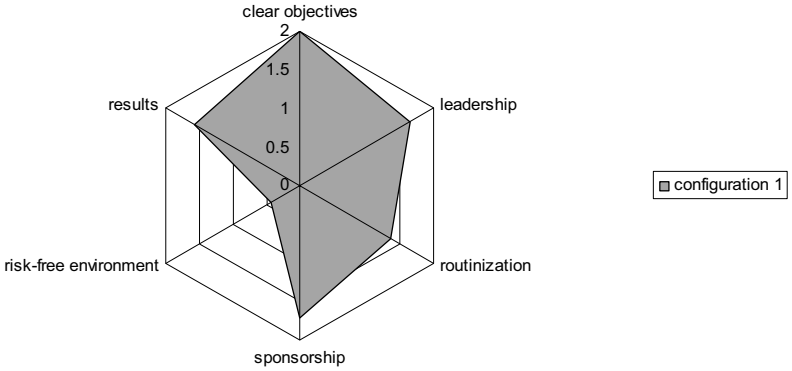
This chapter presents the results of the investigation, and is divided into two sets of findings: V.1) three "successful" configurations (or patterns) of CoPs (from the 39 "successful" CoPs), and V.2) an understanding of the *determinants* of success of each one of these 6 factors and their positive impact on best practice development and sharing within the CoPs. Each set of research findings (V.1 and V.2) is followed by a discussion on the findings.

V.1) Three "successful" configurations of CoPs

Main results and interpretations

The author discovered three types of CoP with distinct configurations, all three of which yield success in the development and sharing of best practices. He called the first of these configurations the "innovating strategic" CoP. Such CoPs fulfill a strategic function for the organization. They create synergies through divisions so that members can share and develop innovating knowledge and then apply it to the products and services of the organization. This type of CoP proves extremely useful in organizations where innovation represents a key asset for success. He called the second CoP configuration one of "operational excellence". These CoPs consist of experts that multiply best practices across divisions, with the aim of carrying out their daily operations in the most effective and efficient way. The goal of these CoPs is not to innovate, but to multiply the most effective and efficient practices throughout the divisions of the organization, leading to a standardization of quality. Lastly, he called the third type of successful CoP configuration "social and productive space" CoPs. Very different from the two preceding configurations, these CoPs seek above all to create a welcoming and secure space for its members. They promote the development of a climate of trust in which members can exchange anecdotes free of hierarchical and bureaucratic pressures.

Figure 17: "Innovating strategic" CoPs



N =13 CoPs

One finds these CoPs in organizations where innovation plays a major part in remaining market competitive. For instance, at the electrical engineering and electronics giant Siemens, the establishment of CoPs confers upon the group the real attributes of a learning company. Irrespective of their related business areas (automation, telecommunications, medical, energy, transport, or services), Siemens's many CoPs are built around the continuous exchange of innovating ideas. This constant surge of new ideas is often the fruit of benchmarking against Siemens's fiercest market competitors. At the IT behemoth IBM, many e-business consultants meet within CoPs to share the more innovating and efficient solutions that they provide to their customers.

These CoPs are established by company management. They adhere closely to the strategic mission of the organization while developing and exchanging practices that increase its performance (increases in income or market shares, and/or cost reductions). As such, these CoPs receive significant resources and the active support of management (via a sponsor). Management names sponsors familiar with the field of expertise of the CoPs, so that they are able to better evaluate CoP performance.

In addition to the routinization of activities - which is very important in the three types of CoPs identified in this research - the guidance of “innovating strategic” CoPs for ongoing development and sharing of best practices brings together the four dimensions: objectives, sponsorship, leadership, and results. In practice, the guidance of these CoPs must be carried out in the following way:

1) The *objectives* of these CoPs, which are very important in guiding them to success, are laid down jointly by the sponsor and the leader. They are quantitatively measurable, and are directed towards the organization’s long-term strategy. The sponsor systematically monitors the coherence between the organization’s corporate objectives and the type of practices developed and exchanged within the CoP. Management orients the CoP’s objectives in a very precise direction, and with a high degree of magnitude.

2) Through the sponsor, management grants members sufficient time to take part in the CoP’s activities (e.g., one-on-one meetings, conference calls, individual discussions with other members). This way, members see their participation in their network’s activities as legitimated - and sometimes even rewarded - by management.

Management also funds a technological infrastructure to facilitate interaction among CoP members, such as a virtual platform supporting the exchange and storage of information and documented practices.

3) An active leadership is provided to steer the CoP towards success. Indeed, the leader regularly connects members together so that they can exchange knowledge related to the use of the practices; in addition, the leader’s mission is to organize several meetings during the year, during which the sponsor and members review the most efficient and/or innovating practices developed within the CoP.

4) The results generated are publicized to demonstrate the success of the CoPs. Indeed, tangible results prove that the initial measurable targets have been met. Concretely, it is through reporting that the leader shows to the sponsor which are the practices developed by the CoP that contributed to the improvement of the organization’s performance (increase in income/market share, lowers costs). These results are checked and approved by the sponsor, then reported to management so that the CoP may continue to receive corporate support. Thus, management both

legitimizes the financial support it brings to the CoP and promotes the CoP throughout the organization, motivating new members to join. The success of the CoP rests therefore mainly on the close cooperation between the sponsor and the leader.

Lastly, one notices that the prevailing environment is seen as largely unimportant for the success of these CoPs. One can explain this by the importance which members attach to the concrete realization of their CoP's strategic mission, rather than to perceiving it as a "social space" for freer self-expression.

The Siemens case

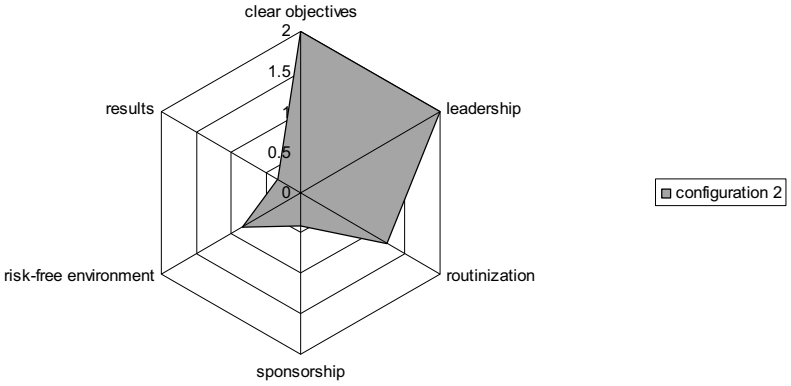
As affirmed by Heinrich von Pierer, CEO of the Siemens Group until 2005, between 60 and 80 percent of the value added generated at Siemens is linked directly to knowledge - and the proportion is growing; in fact, the sharing of experience among networks of experts is one of the keys of the competitive advantage on the competitors.

Within Siemens, an "automotive systems" COP of some 250 engineers meets quarterly to exchange and evaluate key innovating processes developed for the automation of automobile systems. The sponsor of this CoP makes sure engineers develop systems more powerful than those of competitors, and which will benefit the group as a whole. It is on this basis that the sponsor advises management as to which systems it should invest the most resources into, to improve them or innovate further.

Management also funds the updating of a massive networked virtual platform - *ShareNet* - used by engineers and technicians of the COP. They collaborate extensively via *ShareNet* to document and share the most powerful systems they develop and use in their divisions.

Lastly, the CoP measures savings in development time and costs attributable to the collaboration of engineers within the network; it also indexes the best systems retained for market launch, with related sales forecasts. The whole of these data is fed into a report which is transmitted to management. These measurements are possible because the CoP keeps a rigorous electronic record of all data including (1) quantitative information on the performance of the innovating systems, and on sales and market share forecasts; and (2) qualitative data on technical progress made possible by these systems.

Figure 18: "Operational Excellence" CoPs



N = 14 CoPs

One sets up this type of CoP to disseminate throughout divisions the best practices used to carry out the current operations of the company. Thus the automobile manufacturer *DaimlerChrysler* draws together over 70 CoPs, in which engineers and technicians exchange the most efficient and effective assembly practices used on production platforms. Another example is that of *Swiss Post*, where employees can collaborate within a CoP to exchange the most efficient logistic processes for daily routing and distribution of express mail.

Such CoPs are initiated by groups of employees who are experts in a rather narrow field. CoPs of this type serve above all an operational objective for their members. They use them as platforms to exchange best practices to help them to optimize operational excellence within their own division. The success of these CoPs rests primarily on very clear operational objectives and on highly coordinating leadership.

In practice, the guidance of "operational excellence" CoPs for ongoing development and sharing of best practices focuses on the dimensions of objectives and leadership, and takes place in the following way:

1) The objectives are laid down by the leader of the CoP, who must be a recognized expert in his or her field. These objectives are directed towards purely operational aspects, in contrast to the strategic nature of objectives for the previous types of CoPs. They relate to the technical aspects of the practices in development, and are of qualitative and/or quantitative in nature. The leader revises the objectives in an ongoing fashion. In order to achieve this task in the most optimal way, he often asks members for their feed back to support his decisions.

2) The success of the CoP rests primarily with the leader, whose main role is to constantly ensure that the members of the CoP have at their disposal the most effective practices to carry out their current operations. In order to make the CoP as operational and user-friendly as possible, the leader often divides it into thematic sub-practices, and appoints within those relevant specialists from the CoP.

To preserve operational excellence within the CoP, the leader monitors the quality of practices which members provide him or her with, and must approve them before they appear in the common CoP database. Moreover, he or she makes sure that obsolete practices are regularly culled from the CoP and replaced with improved and more effective practices. In sum, the operational success of these CoPs rests mainly on the technical skills of the leader, which allow him or her to filter the practices shared within the CoP, only recording the most highly performing ones.

The leaders of “operational excellence” CoPs regularly present members with a “best of the best” practices exchanged and developed within the CoP. This way, leaders stimulate the active participation of members – who see tangible results from their interactions within the network. In addition, the members are presented with a reference model for better practices that helps them benchmark the operational quality of their own practices, and motivates them to develop even better ones.
Success also rests on the leader’s ability to connect members to one-another through various meetings (e.g., face-to-face discussions, conference calls, video-conferencing) which he or she will oversee and moderate, owing to his or her technical skills. These meetings stimulate the enthusiasm of members, and make it possible for the leader to identify those members that contribute the most relevant knowledge to improve practices. As a result, the leader maximizes interaction among these active members.

The leader's technical training allows him or her to appreciate objectively the other members' competencies, thereby redirecting them towards one-another, according to the type of expertise each one seeks.

One notes the low importance of environmental considerations as a factor in the success of "operational excellence" CoPs. This is due to the high degree of member expertise which gives them a measure of confidence in expressing themselves outside of their CoPs, free of the fear of endangering their careers.

One also notes that sponsorship is unimportant for the success of "operational excellence" CoPs. In fact, the investigation within these CoPs confirms that these receive very weak sponsorship from management. This weak support has several possible explanations: (1) that these CoPs were not initiated by management; (2) that the activities of the CoPs are not part of management's strategic priorities; or (3) that management simply does not know about the existence of these CoPs (no support provided to the CoP in this case).

Management's weak implication causes the leader not to report systematically the benefits which the practices developed by the CoP bring to the performance of the organization. Hence the low importance given to the CoP's results in assessing whether it was successful.

The Oracle case

At Oracle, a CoP of "optimal database usage" brings together some 200 employees from the areas of Europe/Middle East/Africa. Through this CoP, users exchange technical processes and data-processing shortcuts that (1) allow them to keep up-to-date on their knowledge of constantly evolving electronic databases; (2) enable them to use these databases in the most effective way possible in carrying out current operations within the company.

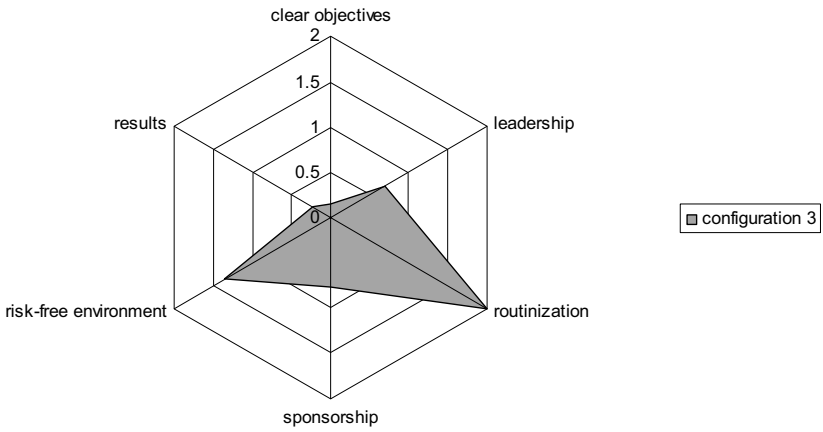
The leader of this CoP is a programmer recognized for his high technical skills. The objectives which he lays down for the CoP are to improve users' technical skills, so that they can maintain a high degree of operationalism as database technology develops.

In order to facilitate interactions among members of the CoP, the leader has assumed a true coordinating role. As such, he has appointed from among the CoP's most active members 10 "country coordinators" in charge of bringing together CoP members in various countries. The leader

has also divided the CoP into “sub-CoPs”, each focused on a narrow technical field within the area of databases. For each sub-CoP, he has named one expert supervisor to assist with requests by the CoP users. This way, users are directed more quickly when they seek answers on a specific part of the databases.

Finally, through regular interactions with country coordinators and the sub-CoP technical experts, the leader keeps abreast of problems that users may encounter, and of the technical solutions that others have provided to them. This overall knowledge then enables him to direct users toward one-another, based on the type of know-how and information that each one seeks.

Figure 19: "Social and productive space" CoPs



N = 12 CoP

This type of CoP is very different from previous two types. One primarily finds "social and productive space" CoPs in public organizations that are characterized by a strong bureaucracy and a pronounced respect for hierarchy. The author found these CoPs in institutions such as the *United Nations (UN)*, the *World Health Organization (WHO)*, and the *International Labour Office (ILO)*. The author also found such CoPs in private banks, where the internal relationship between employees is often very formalized.

"Social and productive space" CoPs cover very broad interest areas. They have only a few objectives - usually general and non-measurable – which are otherwise seen as unimportant for the success of the CoP. For this type of CoP, the lack of significance attached to the results generated is only a consequence of a lack of clear objectives at the outset. Indeed, it is very difficult for these CoPs to measure the impact which they have on the performance of the organization, since their objectives are attached neither to quantitative indicators, nor to qualitative ones.

Unlike in the previous two configurations, these CoPs do not bring together experts in a precise area, and are "self-guided" rather than being actively guided. These CoPs

resemble conglomerates of different yet complementary expertises. The self-guiding nature of these CoPs lies in the domain of a “risk-free environment” that attracts members towards the network in a continuous way. The primary goal of these CoPs is to allow members to share - in a secure, social atmosphere - useful anecdotes which will enable them to be more productive in their respective departments. Because of this, one should not seek to set up systematized guidance of these CoPs, but instead one should let them evolve as members see fit. The hazard of directed guidance for this type of CoP is disturbing their spontaneity and, as a result, disheartening members from continued participation. Since one finds these CoPs in very formalized and hierarchical organizations, environment is a significant factor of success for the CoP. Indeed, a burdensome hierarchy and bureaucracy cause employees to flock towards a more “social” space in which they can speak freely, without endangering their careers. The advantage of this safe environment is that it transcends the hierarchical and functional barriers between members of the CoP.
As a result, the role of the leader is merely secondary. Indeed, these CoPs self-organize constantly, and their success depends on members’ willingness to get together as often as they can. Members conduct meetings where they exchange practical experiences and the lessons drawn from current operations, or from projects in development.

One of the characteristics of these CoPs is their strong permeability to knowledge from outside of the organizational structure. In fact, these CoPs regularly invite external experts to come share their knowledge and experiences. The desired goal is twofold: to gain a fresh overview of one of the areas of the CoP; and to reach out of the CoP’s organizational borders to access more specialized knowledge.
Finally, one notices that sponsorship is fairly important for the success of these CoPs. This can be explained by the often limited resources these CoPs receive, owing mostly to budgetary constraints and management’s vague vision as to the mission of the CoP in the organization.

The case of the United Nations Development Programme (UNDP)

The "Millennium Development Goals" (MDG) CoP enables some 1800 experts from the UN and various governments to exchange experiences and lessons drawn from humanitarian projects. The objective of the CoP is to provide civil servant members with up-to-date knowledge to enable them to draft national and international reports on humanitarian and development policy. These exchanges of anecdotes take place in a climate that strives to remain free of any hierarchical and political pressures. The lessons learned from these projects pertain to human rights, poverty, gender discrimination, girls' education, and HIV/AIDS. Practically speaking, the members of this CoP have experience in such fields as international legal procedure, sub-Saharan Africa food assistance programmes, or HIV/AIDS prevention campaigns in Southeast Asia. Though the CoP offers its members complementarity of expertise in a variety of humanitarian themes, it seeks above all to be "comforting" to them. Indeed, civil servant of this CoP are encouraged to express the grievances and professional frustrations that they do not ordinarily express in their respective departments because of political and bureaucratic constraints.

The CoP is self-managed both because members regularly need complementary knowledge to produce their reports, and also because they feel a genuine need to find themselves within "securing social space" in which they can interact to find solutions to their problems, free from daily administrative red tape.

V.1.1) The main reasons for failure of CoPs

The analysis of interviews with the leaders of the 8 unsuccessful CoPs clearly pointed out two major reasons for failure. First, the CoP lacks a group of core members actively engaged in its activities, such as regular participation in meetings, the inflow of fresh ideas, and support provided to other members for problem solving. Typically, such a group emerges at an early stage of the CoP and should remain stable thereafter. Second, these CoPs owe their failure to the lack of one-to-one interaction between members (face-to-face, telephone, e-mail etc.). Specifically, members rarely

contact each other concerning practices that they use in their respective units, or to help each other solve common problems.

What you should know by now:

Table 7: Summary of the characteristics of the three successful CoP types

CoP	**"strategic innovating"**	**"operational excellence"**	**"social and productive space"**
approach	Top-down	Bottom-up	Bottom-up
CoP objective	*"Strategic" orientation*: Management-initiated CoP to develop and multiply innovating practices in strategic areas for the organization.	*"Operational" orientation*: CoP initiated by experts to help them optimize the excellence of current operations.	*"Social" orientation* : CoP initiated by employees to share experiences and anecdotes in a safe climate free of hierarchical and bureaucratic pressures.
Nature of the objectives to achieve	Quantitative and qualitative / measurable	Quantitative and Qualitative / scantly measured	General / Not measured
Style of guidance	Directed via a sponsor	Coordinated via a leader	Participative via the members
Limitations of the CoP	Likely to be locked in a single direction (dictated by strategy).	The dynamics of the CoP rests too heavily on the initiative of a single leader, and is reduced to technical aspects.	Likely to scatter in various sets of themes and to lose cohesive logic.

V.1.2) Discussion of the 1st set of research findings

Although in a majority of cases, CoPs self-organize spontaneously based on the needs of its members - as stipulated by theory (Wenger et al., 2002; Wenger & Snyder, 2000; McDermott, 1999) - these structures require to be guided using clear objectives. They require a degree of coordination and control - respectively by a leader and a sponsor - that is more or less intense in order to generate tangible results for the organization. The findings also confirm that CoPs differ from the other types of intra-organizational networks, as highlighted by Wenger et al. (2002), namely "project teams", "operational teams", and "purely informal networks". Firstly, a CoP differs from a project team in that the roles of participants are not distributed formally and are not defined with respect to the tasks which the CoP proposes to perform. Moreover, the delineations of member roles are not clear - as would be the case in a project team - but blurry. Progress of the CoP is not measured according to a succession of stages in the realization of predetermined objective; they are measured according to the quantity of practices developed and exchanged within the CoP and which enabled the organization to improve its performance. Contrary to a project team, a CoP does not cease existing once it has achieved its initial objectives.

Secondly, a CoP differs from an operational team in that no specifications or any other type of contractual formality will spell out the role and responsibilities of each participant in achieving a series of operational tasks over time. In addition, the delineations of member participation and roles are clear in an operational team, which is not the case in a CoP.

Thirdly, CoPs are distinct from purely informal networks in that they have a goal spelled out by clear objectives, and that members share a real common interest in developing practices in a precise field. Whereas a purely informal network only lasts as long as its members continue to find it beneficial to the cultivation of business relations suited to their professional needs. Contrary to a CoP, a purely informal network passes on information on a multitude of independent topics; does not have clear objectives; and the delineation of member roles and participation is not at all defined.

The literature on CoPs is rife with references to success factors in stimulating the guidance of CoPs (McDermott, 2001; Wenger et al., 2002; Dubé et al., 2003; Smith/McKeen, 2003). As such, the contribution of this research to the literature on CoPs has been to identify three particular types of successful CoPs across a variety of organization types - more precisely, the identification of three distinct configurations of success factors in guiding CoPs toward the development and sharing of best practices. This research shows that one finds the six success factors of the authors' initial research model in these three configurations, albeit in varying degrees of importance for each configuration.

This research also shows that the objectives and the guidance of these three types of CoPs must differ significantly depending on the organizational context. However, all 3 types can co-exist in the same organization. These differences are also found in the debate in the literature on organizational strategy, which argues that organizational structures tend towards goals of *exploitation* or *exploration* (March, 1991; Burgelman, 2002; Rivkin & Siggelkow, 2003; Gibson & Birkinshaw, 2004).

This research shows firstly that "innovating strategic" CoPs are generally characterized by what Burgelman (2002) calls a "vectorization" of objectives – i.e., pressure exerted on an organizational structure so that it aligns its actions along the strategy of the organization (exploitation). One can find "innovating strategic" CoPs in an organizational context where management grants many resources to the improvement and the innovation of the practices that generate highest profitability for the organization.

Guiding this type of CoP successfully mainly implies the constant presence of a sponsor who must liaise between management and the CoP and ensure that the CoP lays down objectives which conform to the strategy of the organization. The type of top-down guidance of these CoPs must also result in management monitoring - through the sponsor - the accomplishment of measurable targets by the CoP. This type of "monitored" guidance requires a close and continuous cooperation between the sponsor and the leader of the CoP to best manage the bond between the strategic sphere of management and the operational sphere of the CoP.

Secondly, this research shows that “operational excellence” CoPs generally enjoy a higher degree of autonomy. Their objectives, of the quantitative/qualitative and operational types, must respect both alignment with the organization’s activity (exploitation), and adaptability to the specific needs of CoP members in relation to changes in their organizational units (exploration). In other words, these CoPs must reach a state that Rivkin & Siggelkow (2003) describe as “a balance between an approach of exploitation and exploration”. This is similar to what Gibson & Birkinshaw (2004) call “contextual ambidexterity”. It is in line with remarks by Rivkin & Siggelkow (2003) that to be effective an organizational structure must find a balance between the stable operations it must achieve and a degree of creativity to reach anticipated results.

One should find these CoPs in an organizational context where experts enjoy total freedom in network collaboration across their respective units. In such a context, management must strongly encourage intra-organizational collaboration, while avoiding the temptation to supervise or control these networks of experts toward producing results. “Operational excellence” CoPs thus evolve in a context that is characterized by advanced technical training, but which must take place at a pace and rhythm chosen by these experts.

Guiding this type of CoP to success essentially requires a highly experienced and coordinating leader, able to keep continually abreast of the competencies of the other members of the network to better coordinate them. An attempt at control of these CoPs on behalf of management should not take place. Indeed, any directives from management would disturb the spontaneous aspect of the CoP - where experts primarily participate with the constant aim of improving their operational practices. In addition, any management control would likely offend the CoP members in their high degree of expertise – much more advanced than any knowledge management might have in that particular domain.

Thirdly, the characteristics of the “social and productive space” CoPs conform to the findings of various research on socio-emotional aspects within groups (Estabrooks & Carron, 1999; Anzieu & Martin, 1994; Austin, 1997; Hogg, 2000). The author found

that trust and cohesion within these CoPs increase the satisfaction, pleasure, and relaxation which members draw from collaborating and motivates them to return to the group regularly (Estabrooks & Carron, 1999; Hogg, 2000). This research also revealed that cohesion between the members of these CoPs contributes to the development of a sense of security (Hogg, 2000), which creates in return a favorable environment for training (Anzieu & Martin, 1994). The investigation within these CoPs also shows that members participate in order to shed their anxieties and insecurities, and can thus exchange a flood of ideas in a safe environment (Austin, 1997). This feeling of "psychological safety" (Hogg, 2000) within the CoP results from an environment that is free of pressures among members, and which helps them solve problems during group discussions (Hogg, 2000). If this environmental safety is disturbed, the CoP spontaneously ceases to function.

One would find the "social and productive space" CoP in an organizational context that is highly bureaucratized and arranged hierarchically, and where collaboration in networks is not incorporated in the organizational culture. Consequently, these CoPs must evolve in a context free of any management influence, so that they can evolve spontaneously and freely, without imposing any hierarchical pressure on the members. Guidance of these CoPs does not rest on a directing sponsor or on a highly qualified leader, as is the case for the "innovating strategic" CoP and the "operational excellence" CoP. The author prefers to use the term of "self-guidance", which captures the self-organizational aspect of the "social and productive space" CoP - where the engine of the network is a group of very involved and passionate members. It is therefore futile to try to systematize the guidance of these CoPs by the means of management affiliated sponsors, since this would disturb the informality and the spontaneity which make up the strength of this type of CoP.

The author notices that each of the three types of CoPs identified in his research is suited to fill different objectives. There is not, in any absolute sense, one type of CoP that is optimal for managing the development and transfer of practices; rather, it is the organizational context that will determine the nature of the objectives to achieve and, accordingly, the type of CoP suitable to reach those objectives.

The author raises a number of reflections however, as to the possible limitations of "innovating strategic" CoPs and "social and productive space" CoPs. Indeed, one

limitation of the former could be that the “vectorization” of objectives might cause the CoP to suffer from strategic inertia in the long term; in other words an “innovating strategic” CoP risks becoming confined to a single track and missing opportunities to adapt its strategy to the changes in the organization’s environment (Burgelman, 2002).

Similarly, for “social and productive space” type CoPs, one can legitimately ask whether the very general character of their objectives risks producing dissonance among topics developed, thereby lowering cohesion among members.

Lastly, although the innovation of this 1st set of findings lies in the identification of three distinct configurations of success factors, the findings warrant further scholarly verification. Concretely, the author proposes to follow three CoPs of the different types using an ethnological approach, interacting with a multitude of members to gain an in-depth understanding of the significance of each factor for the success of the CoP. As such, the path is clear to undertake research towards a comprehensive grasp of the reasons for success of such configurations; and thus to make detailed recommendations for practitioners.

V.2) An in-depth understanding of the 6 success factors regarding the development and sharing of best practices in CoPs

This part presents the *determinants of success* for each of the 6 success factors of the initial research model. These determinants (or "non-redundant categories" as they are called in the data analysis section IV.5) provide an in-depth explanation of how each of the 6 success factors drives the developing and sharing best practices between CoP members. The following *determinants of success* are therefore useful to complete the understanding of the initial research model ("CoP Steering wheel"). The author wants to make it clear, however, that what follows is an *aggregation* of the determinants of success that he deduced from the 3 different types of identified CoPs. These determinants do not therefore apply equally to all 3 types of CoPs:

"Strategic innovative" CoPs owe their success to determinants related to clear objectives, sponsorship, leadership, results, and routinization.

"Operational excellence" CoPs owe their success to determinants related to clear objectives, leadership, and routinization.

"Social productive" CoPs owe their success to determinants related to a risk-free environment and routinization.

V.2.1) Clear objectives

The following points explain how the setting of clear objectives for the CoP has a positive impact on the development and sharing of best practices within the CoP.

1: Stick to strategic objectives

a) Definition and explanation

The CoP aligns its objectives with the organization's corporate strategy. Concretely, this means that the CoP has a clear mission to develop and share practices that contribute to lower costs for the organization once they are deployed and multiplied

across the organization, and/or increase revenues for the organization once they are deployed and multiplied across the organization.

The set of strategic objectives should be submitted to the top management in the form of a formal document. This enables the top management to control whether the CoP objectives are in accordance with the corporate strategy, or whether they require modifications.

Set quantitative and qualitative benefits to achieve

The investigation pointed out two main streams in the definition of how a practice could lead to *cost reduction*: through the use of cheaper resources to obtain a pre-determined output, and/or by enabling time reduction when expanding a pre-determined output by using better technology and/or skills.

A prerequisite is that the quality of the output should remain unaltered, or be improved. The use and re-use of these cheaper practices within the organization will lead to them being regarded as proven or best practices.

The investigation indicated that *revenue increase* is achieved through those practices that enable time reduction in the production of a pre-determined output. Consequently, faster delivery of the output enables the organization to earn revenues quicker. A further practice in this regard is one that leads to the improved quality of a produced output, which consequently enables the organization to increase its customer satisfaction and/or attract new customers.

The use and re-use of these higher financial earnings practices in the organization, leads to be perceived as proven, or best practices.

Use of indicators: Fixing strategic objectives implies that quantifiable indicators are set and specified. These indicators are used to measure the organizational units' performances, which is achieved by using best practices that were developed and shared in the CoP within a defined period.

A CoP's strategic objective could, for example, be formulated as follows: "Achieve a 5% cost reduction on the production process by means of better maintenance

processes". Another example could be: "reduce the automobiles' production cycle time by 10% to reduce time-to-market by improving the assembling practices' use".
The CoP can also have the objective of identifying a minimum amount of best practices (e.g. 100) in various projects in which CoP members participate within their respective units. The criteria for defining a best practice" should be respected in the ongoing identification process.

b) Positive impact on development and sharing of best practices

Setting clear and measurable objectives provides CoP members with a concrete direction to follow in the process of developing and sharing best practices. Such quantifiable objectives limit CoP members to specific metrics (% of cost reduction, % of revenue increase, % of time reduction, increase of customer satisfaction etc.) that must be respected when they participate in the process of developing and sharing best practices with other members. Furthermore, setting objectives explicitly linked to cost reduction and/or an increase in organizational revenue clearly points out the CoP's strategic relevance for its members. Consequently, members – especially core members – participate more actively in the process of best practice development and sharing, because they can clearly perceive the financial benefit of using such practices in their own organizational unit, and of multiplying such practices throughout their organization.
Furthermore, if the use of best practices by members in their respective organizational units provides them with superior results, it can bring them recognition from middle and/or top management. Therefore, if they receive recognition for the meeting of business objectives, there is more incentive to actively participate in the process of best practice development and sharing with other CoP members.

2: Classify objectives into sub-topics

a) Definition and explanation

The CoP objectives are structured into sub-topics to provide the members with full clarity regarding what the CoP must achieve. Indeed, a taxonomy of objectives gives them a precise orientation to follow by proposing different areas in which they must

develop and share best practices. This very pragmatic success factor is better illustrated by a concrete example found during the investigation.

In a multinational company that produces plastics, a CoP on "Customer Relationship Management for the Automotive Industry" classifies its objectives of developing and sharing best practices into the following sub-topics:

Table 8: Concrete example of objectives classified into sub-topics

SUB-TOPICS	OBJECTIVES (develop and share proven or best practices by means of the following points)
Additional Business & Added Value	• Initiate across Business Units (BUs) development projects with Original Equipment Manufacturers (OEMs) and tier 1 suppliers • Search for new applications of existing products • Search for new products for existing applications • Search for profitable additional steps within the existing value chain
Marketing Intelligence	• Improve understanding of the automotive market across BUs, share and bundle the competency of a single BU/BL marketing expertise • Involve local Company X entities (Company X Japan, China…) • Develop strategies that fit OEM development structure Body, Interior, Suspension… across BUs
Original Equipment Manufacturer (OEM) Contacts	• Extend existing contacts(across BUs) at OEMs • Develop contacts to pre-development departments, concept study teams… • Global activity – go to innovative OEMs like Toyota, Honda, BMW – contact OEMs we have not seen before (China, Korea…)
Company's Brand Support	• Communicate Company X's innovation and automotive development competencies to OEMs, the motor press, and at industry events • Presence in motor press (Newsletter) • Internet portal "Company X for Automotive Industry""

As detailed in the example, the CoP breaks down its main topic "Customer Relationship Management in the Automotive Industry" into four sub-topics: "Additional Business & Added Value", "Marketing Intelligence", "Original Equipment Manufacturer (OEM) Contacts" and "Brand Support". The four sub-topics differ significantly from one another in terms of knowledge or practices, which points out the reason for distinctly

separating them objective-wise. Each sub-topic is then broken down into a multiplicity of objectives through the fulfillment of which the company has a realistic chance of developing new practices and competencies. As shown in the example, the sub-topic "Additional Business & Added Value" is detailed into objectives such as "find new applications of existing products" or "find new products for existing applications" (e.g., "surface design", "light weight construction"). CoP members thus know precisely in which areas the company expects them to develop and share best practices.

b) Positive impact on development and sharing of best practices

Mapping out the objectives in such a way explicitly presents and details a range of CoP sub-topics into which members are invited to invest their knowledge to develop best practices, and/or share the best practices they use with other members.

Classifying objectives into sub-topics makes it very clear to CoP members in what precise fields the upper management expects them to concentrate their efforts to develop and share best practices. In that sense, classification of objectives into sub-topics is a pragmatic and illustrative way of promoting the realization of these objectives in a more structured and detailed way. It therefore enables a more targeted development and sharing of best practices between members, who know precisely what outputs the organization expects from the CoP's activity.

3: Establish continuous feedbacks for achieving goals

a) Definition and explanation

The CoP leader (with the sponsor sometimes) sets the CoP's objectives on an ongoing basis. However, suggestions, requirements and complaints from core members are taken into consideration in a democratic way, and "refreshed" sets of objectives are built. This ensures that core members' personal objectives are taken into consideration and that they know the source of the objectives that were set for the CoP.

b) Positive impact on development and sharing of best practices

The continuous revision of objectives gives the CoP momentum by re-activating interactions between the core members. It maintains a "sane tension" within the CoP by keeping it adaptive to the evolving environment in its area of activity. It supports innovativeness and creativity by welcoming fresh ideas from members, who often work in different markets/countries. Revising the objectives in a participative way is also a means of maintaining ongoing discussions on problems and possible enhancements related to CoP activity.

Even though objectives may be revised on an ongoing basis, their revision has to fulfill a double requisite. Firstly, they must be adapted to the organization's fast-moving business[28] or social[29] areas of activity. Secondly, they must adapt to the evolving operational needs of the core members, who are often spread out in different markets/countries.

When the core members realize that — in line with the market the reality[30], and the organization's strategic orientation — their participation contributes to the objectives' elaboration, their motivation to participate regularly and actively in the CoP is boosted. Consequently, core members participate with a greater sense of belonging, and a higher interest. This increases their conviction regarding the CoP's usefulness in their daily operational activities. In turn, this enhanced integration into the CoPs' activities naturally shifts these members towards the process of the development and sharing of best practices with their peers.

V.2.2) Routinization of activities

The following points (from the "non-redundant categories", in data analysis section IV.5) explain how routinization of activities for the CoP has a positive impact on the development and sharing of best practices within the CoP.

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[28] In respect of CoPs that are active in private companies

[29] In respect of CoPs that are active in public institutions

[30] Or in respect of public institutions with the social field of action's reality

1: Combine regular and ad hoc meetings

a) Definition and explanation

To nurture social and operational activity within the CoP, its members need regular meeting platforms where they can socialize, discuss and exchange ideas, experiences, knowledge and best practices. Members meet at regular quarterly, semi-annual, or annual general meetings, during which overall CoP strategy and general and specific topics are usually presented and discussed. Generally, a great number of core members participate in these meetings. In between these regular meetings, smaller reunions between members are organized in the form of problem-solving workshops in which members participate interactively in round-table discussions. The challenge is therefore to regulate these 2 types of meetings in order to give the network's activity a regular rhythm. In other words, to have members discuss matters face-to-face in order to share their best practices and develop them further. Both approaches are necessary for the development and sharing of best practices to occur.

b) Positive impact on best practice development and sharing

1) At regular meetings[31]

Holding regular meetings exerts "healthy" pressure on members who are regularly asked to present the best practices that they use in their respective organizational unit, or in a specific project. At meetings, members may be required to present the technical aspects as well as the superior results that these practices generate. This is the most direct means of informing the rest of the CoP of a best practice. During these presentations, practices are criticized, completed, or even fully approved by other members. This leads to discussions that in turn lead to suggestions on how to improve a practice, or how to adapt it to an organizational unit's standards. The interaction with the presenter enables the members in the audience to obtain detailed insights into practices' functions, and to elucidate certain aspects of the practices that they have not fully understood.

Members who feel that the presented best practice is suitable for their organizational unit, can later get in touch with the presenter and arrange for a transfer of the practice.

[31] A regular meeting can be held in different ways: face-to-face, conference call, web-cast, videoconferencing etc.

Regular meetings also encompass informal “coffee break” discussions, during which members get to know one another better and cultivate trust between one another. During these informal face-to-face chats, members are kept informed about the best practices used in the various organizational units (or projects). Two members may, for example, agree to stay in touch after the meeting so that the holder of a best practice can transfer its explicit and implicit knowledge to the other member. Indeed, such a request is easier to ask from someone with whom social interaction has already taken place. If these two members had not taken part in the regular meeting, the best practice transfer would probably not have occurred. Furthermore, these members would probably never have known of a best practice elsewhere in the organization, had there not been a regular face-to-face meeting.

Informal discussions at regular meetings often occur randomly between two members: during a coffee break, in the audience during formal presentations, or two members may even decide to leave the meeting venue, and discuss their respective best practices in the corridor.

Regular face-to-face meetings offer CoP members the opportunity to interact with the sponsor, as long as the latter regularly attends the events. This way, the sponsor can personally discuss specific issues with some of the members, and develop a hunch regarding the latest hot topics within the CoP. This feedback from members provides the sponsor with concrete statements and examples to report to the top management. This reporting may impact the way strategic objectives for the CoP are subsequently formulated by the top management.

Regular conference calls, web-casts and videoconferencing are also used in CoPs, and likewise enable discussions on best practices to take place. Explicit knowledge contained in best practices are transferred through these electronic means (either orally, or via electronic documentation). However, these means generally leave less time for prolonged informal discussions (during which important flows of explicit and tacit knowledge normally occur). Furthermore, trust between members is more difficult to cultivate through these electronic means, due to the absence of direct and social face-to-face human interaction.

When two members have face-to-face contact, their voice and physical appearance generate a feeling between them that, to a certain extent, determines the level of trust and the potential for staying in touch in future. Therefore, although electronic means used to host meetings should be understood as ways to support the regular transfer of explicit knowledge regarding best practices, they should, however, always be used together with face-to-face meetings. While regular face-to-face interaction develops the necessary informality that enables members to overcome knowledge sharing barriers and regularly contact one another, regular use of electronic means is a complementary way of being informed of the practices that are being developed by different CoP members (on a superficial level), and of transferring a best practice's technical aspects (explicit knowledge) to other members.

Even though regular meetings (face-to-face or virtual) give the CoP a regular rhythm, the topics that are presented and discussed at these events must be in line with the CoP's effective needs and the organization's strategy. In other words, it is necessary to find a right balance between the regularity of meetings and an effective need to discuss certain substantial topics of strategic relevance for the organization. If the CoP falls into the trap of holding meetings just for regularity's sake, this has no truly effective use for best practice sharing and development. Indeed, a lack of content at meetings has no added value in terms of best practices for CoP members. It just has the negative consequence of discouraging them from participating in external meetings.

2) Ad hoc meetings[32]

Ad hoc meetings are conducted in the form of smaller workshops. They are conducted in between regular meetings, at different geographical locations, with CoP members from different organizational units. Several ad hoc meetings can take place simultaneously. Members get together in workshops to solve common problems linked to their operations in their respective organizational units (or in their projects). Due to the smaller number of participants, it is easier to organize ad hoc meetings than

[32] Ad-hoc meetings are held in the form of small-scale workshops, face-to-face, conference calls, or virtually (web-cast, videoconferencing etc.)

general meetings. Ad hoc meetings' smaller size facilitates increased interaction between members, which leads to more sharing of ideas, experiences, and knowledge. The emulation phenomenon that sometimes occurs during a problem-solving session translates into animated discussions. These discussions generate new ideas, and, sometimes, a new practice that can solve a common problem. The members' proximity and the density of their interactions form a favorable working atmosphere for developing and sharing best practices together. When best practices are shared and discussed within the workshop, the resultant hybrid practice is conceptualized. This occurs through a process of knowledge socialization. Participants can subsequently further develop the best practice in their respective units.

The high interactivity of these workshops is also an opportunity to identify potential problems that can occur in the field of the CoP's practice. These problems are reported to the rest of the CoP members at the next regular meeting to avoid the problem from being amplified throughout the entire CoP. This early warning allows the members to anticipate such problems and stimulates them to consider improvements to certain practices so that they might remain best practices. Finally, it is possible for an existing best practice, used by one of the participants in his organizational unit, to be suddenly identified during these workshops. This practice can subseuently be adopted by the members for their respective organizational units.

If a new best practice is developed, early warnings are identified with which to improve a practice, or a best practice is simply identified, this information should be fed back to the entire CoP by the workshop's participants and discussed at the next regular general meeting.

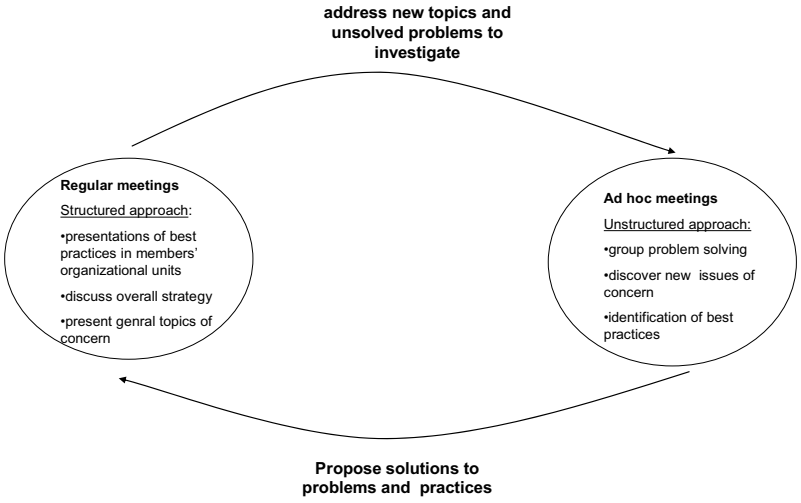
Regular participation in ad hoc activities means that the members remain active in the field of their CoP. These small-scale interfaces nurture social links/contacts between the members, ensuring that the community spirit doesn't disappear between the regular general meetings. This culture of flexibility in organizing workshops leads to a multiplicity of ad hoc meetings, which in turn multiplies the social links/contacts between the participants. A member who, for example, participates in several workshops will already have met a large number of members whom he now knows personally. In time, that member will contact members of his network without reserve whenever he needs assistance to solve an operational problem. Assistance translates

into discussions that can lead to a holder immediately sharing a better practice that can solve an initial problem with a receiver, as well as leading to an exchange of ideas and knowledge which, through a process of knowledge combination, can lead to an existing practice's improvement.

In time, a member who nurtures his network by regularly attending these flexible workshops becomes an intermediary agent between other members, as he gets to know the members' various fields of expertise. This intermediary position therefore confers on him the tacit responsibility of connecting best practice holders within the CoP with best practice applicants.

Ideally, there should be a continuous feedback loop that links ad hoc meetings with regular meetings, forming the framework for the development and sharing of best practices between members:

Figure 20: Continuous loop between ad hoc and regular meetings



2: Inject external expertise regularly

a) Definition and explanation

Knowledge related to the CoP's practice is regularly imported from experts outside the CoP. These experts are usually from other organizations, but could also be part of the organization to which the CoP belongs. Usually, they are practitioners, but they can also be theorists or academics from universities and research centers. These external experts are invited to regular, or to ad hoc CoP meetings, during which they are requested to share their ideas, insights, experience in the field, knowledge of the CoP's practice, as well as best practices *per se*. It is obvious that the practices that they reveal are relevant to the CoP's knowledge domain. These practices are either used in industries identical to that with which the CoP is concerned, or they are used in similar ones – in which case the CoP members can adapt the revealed practices to their own industry. This inflow of fresh knowledge and external best practices brings new perspectives to the CoP on which the members can reflect in their quest to further develop the best practices in their own industry. These external experts also provide new perspectives for solving problems into the CoP. This should prevent the CoP members from overwhelming one another with the rigid mental schemes that are usually characteristic of the subsidiary company (or organization) to which they belong.

b) Positive impact on best practice development and sharing

i) External benchmarking

The first advantage of regularly bringing external experts into the CoP is the possibility this offers the members for external benchmarking. When experts have revealed best practices that have been successful in other organizations, the CoP members could compare these with the best practices they currently use in their own organizational unit. Furthermore, if an expert has had experiences with a large number of organizations, he could provide the CoP members with a wider range of practical examples. The revealed practices will be adopted by the CoP members if they provide better performances (lower costs, increased revenues, time reduction, increased quality output) than the actual practices that the CoP members use.

Two scenarios are likely during practice adoption:

1) The revealed practice fits technically into the industry of the CoP members' field of operations. The revealed practice can then be directly adopted by the CoP members, with few or no technical adaptations. If, through past experience, the expert already knows how to use that practice in the CoP's industry, he could share the tacit and explicit knowledge directly, through face-to-face contact, with the members. This allows the successes and failures related to the use of the practice to be passed on.
2) The exposed practice is not directly applicable to the CoP's field of operations, but its process or methodology's general design provides the CoP members with a new perspective, and could inspire the remodeling of an existing best practice within the CoP, in order to turn it into an even-better practice, or the creation of a new practice in the field of the CoP's operations.
In the latter two cases, the CoP members will break the external practice down into parts, so that some parts can be used to improve an existing best practice, or be used to create a new practice.

ii) Specialization in specific parts of the practice
External experts should also be invited to the regular and ad hoc meetings to give a detailed presentation on a practice's specific part. For instance, a CoP could invite several external experts, each of them being specialized in one specific sequence of a manufacturing process, to share their knowledge of a manufacturing practice (i.e., a process, a methodology). The advantage of this approach is that experts come up with very focused technical approaches, and usually provide a rich knowledge content of a practice's specific sequence (i.e. process, methodology). This proves useful for CoP members, allowing them to significantly improve their existing best practices.

iii) Keeping in touch with experts and extending a CoP's network to other organizations.
A CoP has a strong interest in cultivating ongoing collaboration with external experts. By reiterating invitations to external experts to come to its meetings, the CoP ensures that these experts will continue to transfer external practices to its members in future. These experts can also be asked to return whenever the CoP needs an injection of specific knowledge linked to its practice. Furthermore, these initial external experts will meet others experts (with best practices). They might be willing to collaborate with the

CoP as well, and share the best practices that they have collected from other organizations.

iv) Low barriers to knowledge sharing

As long as external experts do not belong to a competing organization, they usually have low or no barriers to sharing their knowledge on a best practice with CoP members. On the other hand, in certain cases, CoP members from different organizational units that compete for internal resources might be willing to share only a limited portion of their knowledge related to a best practice with the other members. Knowledge sharing barriers between members can be overcome by calling on an external specialist in respect of certain critical topics. Indeed, an external expert is not necessarily under an ethical constraint to keep quiet about all the topics that he extracts from an organization (which is often the case between CoP members from different organizational units).

v) Maintain excitement within the CoP

Organizing regular and ad hoc meetings with external experts around new exciting topics may bring an increasing number of motivated members to meetings. If this happens, face-to-face interactions between the members and experts (and between members), coupled with a real interest in learning about a new topic, could lead to discussions that are rich in knowledge content. These emulating interactions between motivated people stimulate creativity, generating new perceptions and ideas for developing innovative practices.

3: IT creates 'stickiness' between members

a) *Definition* and explanation

An information technology infrastructure within the organization does not, in itself, ensure that a CoP will become and remain active. However, it does create bonds between CoP members if there are already solid social links. Correct use of these IT tools' potential for daily work could subsequently provides the CoP with opportunities for active virtual networking. A prerequisite for the CoP to make effective and efficient use of an IT infrastructure in terms of best practice sharing and development is that its

members should already have active social links. A real interest in taking part in the CoP's activity, as well as the level of trust, friendship and care that builds up between members, develop participatory responsibility in active CoP members' minds. The result is that members are naturally led to respond to the electronic requests sent to them by other members. However, it is only if members have a real interest in cultivating these social links on a regular basis that an intranet system will fulfill its function as a "magnetic field" for: linking the CoP members to a central pole, and bonding them, in order to keep them connected with one another. It is in the light of this analogy that the "stickniess", or bonding, between the members must be understood.

b) Positive impact on development and sharing of best practices

Regular use of IT creates a favorable environment for maintaining ongoing relations with other CoP members. Through an intranet system, for instance, a member has various electronic tools to establish instantaneous connections with another member whenever necessary. These electronic connections serve the purpose of conveying requests, information, and knowledge related to the practice of the CoP. The various electronic tools presented below convey information and knowledge contained in best practices in the form of explicit documents/texts, and dialogues.

i) E-mail

This electronic support is used by a CoP member to inform another member (or several others, through *group mail*) that some additional knowledge is needed on a specific practice. Since e-mail is checked regularly, the recipient can provide the sender with assistance in the form of: a return phone call during which explanations on an existing best practice will be conveyed, and during which the sender and the recipient may agree to extend interaction with a conference call, or even a face-to-face meeting, to discuss existing best practices; an electronic document clearly explaining the functioning of a best practice, and how to implement it, or an e-mail in which the recipient directs the sender to an expert in the field of the requested practice.

Furthermore, e-mail is a convenient communication channel for regularly and informally keeping in touch with other CoP members. This contributes to keeping the sense of belonging to the community alive, and maintaining a certain level of

friendship, trust, care and comfort between members (this is especially true for core members). Trust, care and comfort between members particularly enable them to get back to one another when they need practical assistance with their daily operations. In a time of need, a member might willingly take the time to share knowledge of a best practice with another member. Best practices are subesequently shared, and even developed when further discussions generate new ideas on how to improve the existing practice.

ii) Yellow pages

CoP members have access to an electronic list (available to organizaional members) in which experts are classified according to their respective fields of expertise. It also provides information on their skills, as well as on the projects on which hthey have worked (or are currently working on).

CoP members use this electronic tool to identify experts who can help them solve specific problems related to their practices. Sometimes, these experts are members of the CoP, and sometimes not, which qualifies them as potential active members.

Once a CoP member contacts the expert for assistance, discussions on a specific practice may start. Through discussions, knowledge of a best practice may be shared by the expert with the CoP member. This sharing of knowledge can take various forms: ranging from a simple transfer of written documents on a best practice, to full assistance from the expert for the process of best practice transfer from one organizational unit to another. Naturally, this second form occurs as a result of a negotiation process between the CoP member and the expert. The discussions between that expert and the CoP member could lead to the further development of an existing best practice in order to improve it. This occurs when both the expert and the CoP member have experience in using the same best practice, for instance, or have experience with using very similar practices. In this case, the technical specificities of that best practice are discussed in detail. Through a process of reflection and consensus, new ideas on how to improve the practice can emerge from the discussion, and make it an even-better practice.

iii) Instant messenger system

This software tool enables two (or more) CoP members to communicate with each other through the organization's intranet system. When member A requests assistance

from member B, B receives a signal (in the form of a flickering icon) on which he clicks if he wants to be put into contact with A. Member A usually uses the instant messenger system to request assistance from member B, in order to solve a problem in relation with the CoP's practice. When B sees the request pop up on his computer's screen, he can choose to interrupt his regular tasks, and provide immediate assistance to A. A and B will then enter into an online dialogue, and technical knowledge of the best practice will be transferred from B to A in written form. This form of online communication can be coupled with the immediate transmission of electronic documents related to that practice. For instance, when A receives the electronic documentation on the practice and opens it up on his computer screen, the explicit knowledge (linked to technical aspects of the practice) found in the electronic document can easily be discussed and commented on with B.

These virtual documents (charts, maps, processes, text etc.) are a robust and concrete basis to reflect up when B explains how the best practice functions to A. An instant messenger system maintains the "stickiness" between members because any CoP member can theoretically be reached whenever and wherever in the organization by other CoP members, as long as his computer is connected to the organization's intranet.

Indeed, instant messenger enables immediate knowledge flows, and provides great flexibility for members to ask for best practice-related knowledge at any time of the day - and for instantaneously receiving knowledge from members located in different geographical areas. In this sense, IT creates bonds between CoP members. It can also happen that A and B are initially connected via instant messenger in order to solve a specific problem together, and then switch to the phone when more flexibility is required in the communication process. However, the tool provides "stickiness" between members as long as CoP members are willing to provide assistance with best practices with which they are familiar. In other words, an *ethic* of assisting other members must be in place in the CoP for the practicality of instant messenger to deploy its effects in terms of knowledge and best practice sharing.

iv) Internet protocol (IP) telephony

The costs of communication via this technological means are negligible. IP telephony is therefore attractive for the organization, since CoP members need to have long distance phone calls with each other. When IP telephony (e.g. Skype) is used in the

organization, each PC user is provided with a call number. This implies that each CoP member can at any time be reached on his PC by another CoP member, who needs assistance with a practice. As with the instant messenger system, an *ethic* of assisting other CoP members in their daily operations is a pre-requisite for practitioners to start sharing knowledge via IP telephony. With such an interactive tool, two CoP members in front of their PCs have great flexibility in developing and sharing knowledge related to best practices in a conversational manner. The precise aspects (i.e., the technology, process or method, logistics) of best practices are discussed openly. These conversations can be supplemented with visuals (charts, process maps, texts) that members extract from electronic databases and share through the intranet, and which appear on both PCs' screens.

v) Conference calls (and videoconferencing):
Groups of CoP members can unite on a common platform to discuss special topics, or a specific problem to solve that is related to the CoP's practice. During a conference call, members ask questions to whomever they consider an expert in a certain practice (or to designated experts). The expert provides the members with the knowledge that they need to solve their practice-related problem in their operational activity. He could also provide them with the knowledge they need to improve the practices they use in their respective organizational units, so that these practice become better practices, or even best practices. When other members who participate in the conference call listen to these questions and to the technical answers provided by the expert, it could stimulate them to stimulate the debate by asking questions or sharing their knowledge of the practice under discussion. An emulation phenomenon occurs through the active exchange of ideas, experiences and knowledge. This could result in the discovery of new best ways of solving a problem, or in new insights on how to improve an existing best practice. Finally, depending on the orientation followed by the group discussion (sometimes it is merely random), certain members share their existing best practices with the other participants.

NB: The same statements and conclusions could be made for *videoconferencing*, with the exception that this technology enables members to see one another on screens during the virtual meeting. To a certain extent, this enables non-verbal communication to be part of the dialogue between the members if the bandwidth is large enough.

vi) Web-casts

This technology is convenient for CoPs, since it enables members to share electronic documents interactively with one another during conference calls by means of the organization's intranet system. During conference calls, documents can be posted on the intranet by any participant at any time, enabling the other participants to instantaneously see the document appear on their PC screens. This occurs even though they may be at different geographical locations. Web-cast technology therefore supports explicit online documentation of best practices, and enables practice-related technical explanations to be conveyed to all the participants in virtual meetings. Furthermore, the members who post their best practice document on the web-cast then have visual evidence to support their arguments and explanations on the practices that they are sharing and discussing with other participants. When participants all discuss the different aspects of the best practice that was posted, the clarity of the document determines its usefulness as a tangible basis for reflection and decision-making. Through dialogue and visual evidence, members may reach consensus the presented practice's taxonomy: whether there is evidence that it should be classified as the best practice, and should therefore be transferred to the participants' respective organizational units; or whether there are some improvements that could be made, in which case participants enter into a longer discussion process that evolves around the practice's different aspects. Members then decide which aspects to develop further to make it a better practice.

4: Access to intra-/inter organizational networks

a) Definition and explanation

Via the contacts they cultivate with one another, CoP members have access to experts 1) within the organization (intra organizational networks) and 2) outside the organization (intra organizational networks). These experts could hold best practices that match the CoP's field, and could be willing to share the knowledge with the CoP members. In this sense, the CoP is a pathway for members, through which they can extend their knowledge contacts across the organization and beyond its boundaries.

***b) Positive impact on best practice development and sharing*:**

1) Access to intra organizational networks:

One of the reasons that motivate a CoP member to participate in a network is that other CoP members (from different organizational units) collaborate with practice-related experts outside the CoP's boundaries. These experts, working within the organization, could be holders of well-documented best practices that have a great potential to be shared and developed further if they could penetrate the CoP's boundaries. Therefore, members could use one another as "swiveling platforms" to be directed towards other experts elsewhere in the organization. These experts could assist them in improving the practices they use in their organizational unit through internal benchmarking with their own best practices by helping them adhere to the practice performance's key indicators. Through a benchmarking process, a member either adopts the expert's best practice in its integral form, or only adopts elements of the best practice that he needs to integrate into his organizational unit in order to make it a "better" practice or a best practice.

2) Access to inter organizational networks:

Members may use each other as "swiveling platforms" to re-orient themselves towards practice-related experts in other organizations. Interaction with an external expert is an opportunity for CoP members to enter a process of external benchmarking. It enables them to compare their internal best practices with those of another organization. External benchmarking conducted with these external experts leads to improvements in the existing practices' elements by helping them to adhere to the key indicators. It may also lead to an integral adoption of well-documented best practices.

V.2.3) Leadership

The following points (from the "non-redundant categories" in data analysis section IV.5) explain the concrete actions and guidance through which the CoP leader has a positive impact on best practice development and sharing within the CoP.

1: Paternalist role

a) Definition and explanation

The leader pilots his CoP's activities by adopting a concept of the network coordinator role as that of a father: he tends to impose his control and guidelines on members, while simultaneously accepting the responsibility for the continuous development of their know-how. In that respect, he takes on a father-figure role and encourages all initiatives related to best practice development and sharing.

b) Positive impact on development and sharing of best practices

Through a set of concrete measures in a number of different situations, the CoP leader positively influences members to develop and share best practices:

1) Assistance during face-to-face meetings/workshops and conference calls: The CoP leader implements his skills as a moderator by assisting the members at any time. The leader ensures that the ideas and knowledge that flow between members have the potential to lead to best practice development. He has the capacity to detect when the debate between members is sterile, and then to reorient the group discussion towards themes that have the potential to generate useful knowledge and practice sharing.

2) Document the best practices in explicit documents: The CoP leader is an editor of best practices. On an ongoing basis, he reminds the core members that the best practices that are identified, developed and shared within the CoP should be written-down in an explicit form. The CoP leader does not have full control of all the members concerning the documenting of practices. However, he requires the core members to regularly submit a list of the best practices that they have shared with other members, and which they might have already used. The leader also requests the core members to specify which practices on the list have a significant potential to be improved, and where enhancements should be made.

3*) Report members' good performances*: Whenever the CoP leader notices that a member performs well (by contributing in terms of knowledge, practices, experiences,

lessons learned etc.), he reports this to the members' superior in his subsidiary company. Consequently, the members have more incentive to contribute actively in terms of useful knowledge and practices.

4) Decide on themes and presentations: The CoP leader can influence the orientation of the debates at meetings by selecting themes that will be discussed, and by appointing specific members for a presentation on a well-defined practice. This is a way of supporting the development of certain practices over others. Assigning different members to present their project(s) and best practices at each meeting/workshop, and deciding the CoP's agenda, implies that the leader has a clear idea of the orientation that he wants the CoP to follow (in keeping with the organization's strategic objectives).

5) Name specialists: The CoP leader can give more importance and an increased sense of responsibility to specific core members by allocating them the position of specialist on specific topics. This could firstly motivate these appointed specialists to keep up-to-date with their specialization topic(s), and, hence, be better prepared to answer specific questions that different members might have concerning practices related to the topic. Secondly, this enables other members to rapidly locate the right person to contact should a problem arise.

6) Credibility: For a CoP leader to become the person to whom everyone is referred in the network, members must consider him reliable. If the CoP leader is perceived as a knowledgeable and competent person, there is a greater probability that he will be viewed and accepted as a father figure in the CoP. If this happens, it is likely that the members will better trust the way the CoPs activities are conducted, and adhere to his way of managing the CoP. Consequently, the members have the impression that someone with a real concern for the problem solving of their daily operational tasks are coordinating and matching them with one another. This increases the probability that the members will remain motivated and enthusiastic to maintain collaboration in the joint sharing and developing of best practices.

2: Self-developing oriented leader

a) Definition and explanation

The idea is that the leader's active participation in the CoP is motivated by a need to fill his own knowledge gaps related to problems solving in his daily operations.

b) Positive impact on development and sharing of best practices

It is stimulating for a CoP leader to activate a network in which he knows that he can benefit from the other members' knowledge in solving his own operational problems, which, in turn, furthers his knowledge of the subject. He should be able to create a stimulus between the members and himself with best practices being developed via active ongoing knowledge contributions from both sides. This stimulus is particularly created between members at face-to-face meetings (or conference calls), if the CoP leader openly presents unsolved problems and asks his audience for solutions. This provokes an open debate between the members. Flows of knowledge and ideas unite in a brainstorming session, and end up as a solution (in the form of a best practice) to solve the initial problem. By provoking the debate in such a manner, the leader stimulates the sharing of existing practices between members, until the most appropriate practice to solve the initial problem is voted the best practice, and gets indexed as such.

3: Driver and Promoter role

a) Definition and explanation

The leader must make the CoP as attractive as possible for the members and potential members. Making the CoP more attractive means that the leader structures it into different sub-topics in a very distinct way. From an "architectural" perspective, this means dividing the CoP into a number of sub-CoPs with each sub-CoP managing and indexing best practices relative to a specific part of the CoP's general practice. With such a clustering, members have the impression that they are entering different "hubs" each time they search for a best practice related to a specific CoP knowledge area.

It is only when a sub-CoP gains importance in terms of its content of best practices and its number of users that it eventually becomes an independent CoP, and splits off from the original CoP. When this occurs, it could be an indicator that the the sub-CoP's developed content has a potential to grow rapidly, and is particularly attractive for the organization in terms of strategy. If not, sub-CoPs remain under a global CoP's yoke.

b) Positive impact on best practice development and sharing

By the means of this clear and explicit division into "hubs" (or sub-CoPs) members and potential members find their way through the CoP much more easily when they search for a practice to apply in a specific field in their daily operations. A member (or a potential member) who needs a solution to solve a problem related to one specific part of the CoP's practice is able to identify and select the appropriate "hub" where he will encounter the type of practice he is looking for. Simultaneously, a member (or a potential member) who has a best practice that could be used to increase performance (cost, time, or quality) in a specific situation, knows exactly in which sub-CoP to post it so that the other members can access it.

In each sub-CoP, best practices are found in the form of written, classified documents, and within identified groups of people interested in one specific part of the whole practice.

If a sub-division of the CoP is perceived as a real convenience for the members, the latter more willingly and regularly visit "hubs" to search for best practices, since this is a quicker and easier solution. The sharing of best practices is therefore stimulated, because the members are more willing to access best practices from a platform that clearly announces what it offers and they post and share best practices more enthusiastically on a platform where they know their practices will match other members' demand.

Members cultivate regular interactions and share best practices with one another within sub-CoPs. Group discussions contribute to improving the practices that are shared, and aim at developing them further until they become "even-better" practices. Within these "hubs", specific practices are also developed from scratch, in order to solve a problem common to all the members.

Another advantage of having sub-CoPs is that they attract more potential members to join the CoP, as long as the CoP leader publicizes their advantages throughout the organization. Explicitly presenting the various topics of each "hub's" practice, attracts potential CoP members once it is clear what they can obtain from these sub-CoP in terms of knowledge and best practices. Potential members are valuable assets for the CoP, since they can be holders of strategic knowledge and best practices that are useful for the rest of the CoP.

4: Coordinator role

a) Definition and explanation

The CoP leader maintains the ongoing activity of coordinating the CoP members' competencies. His role of connecting knowledge-givers with knowledge-takers builds and reinforces a culture of best practice sharing within the network. This intermediary position between the members suggests that the leader "knows who knows what" within the CoP, and consequently redirects members towards one another to share their knowledge and develop best practices together. In this coordinator role, the CoP leader also cultivates an ongoing relationship with the sponsor.

b) Positive impact on development and sharing of best practices

To coordinate the members' competencies and the best practices, the CoP leader adopts a "tele-marketer approach"[33]. This approach is integrated into a CoP leader's daily tasks as follows: he contacts the core members regularly and has informal exchanges with them (by phone, face-to-face, e-mail) concerning their latest acquisitions in terms of best practices during which he learns more about those practices. He also investigates difficulties that they have encountered in the utilization of other practices that are linked to CoP's activity.

[33] This is an analogy to the pro-active approach used in sales techniques, with the salesman trying to identify the potential buyer's needs, and then convincing him to buy the goods by promoting its benefits. This pro-active approach is used by the CoP leader, who plays the role of intermediary between the givers and takers of best practices within the CoP.

By multiplying these feedback sessions with members on an ongoing basis, the CoP leader builds a growing database that contains information on the latest improvements that have been added to the existing best practices in different organizational units and subsidiary companies, on where to find that existing knowledge (names and locations of best practice holders), on the existing difficulties that members encounter with the utilization of practices to fulfill operational tasks, and on the latest trends (within organizational units and subsidiary companies) regarding the development of revolutionary practices that have significant potential to become best practices for the organization.

The information contained in the leaders' database enables him to "know who knows what" within the CoP's boundaries. The leader goes even further when collecting information by asking members from whom they received the knowledge that they hold. Consequently, the CoP leader can be more effective in the connections he establishes between members, in the sense that he can make knowledge-relevant matches between members. The richness of the information contained in the leaders' database enables him to connect members who need their respective know-how to jointly develop an existing practice, and possibly improve it through interactions; to connect a member who is struggling with an operational task with another member who could share his best practice(s) and solve the problem, and to ask a member to present his revolutionary practice to the rest of the CoP, so that it can be multiplied throughout the CoP.

Part of the leaders' networking activities is also to connect members with one another through a virtual platform of best practices (if there is such a platform).The CoP leader encourages members to use the best practices that are on the platform, and urges them to contact their authors[34]. Getting in touch with the author of a best practice enables a CoP member to gain knowledge on how to implement the best practice and how to use it properly through discussions. This interaction may encourage these two CoP members to collaborate in future, to participate in future discussions, and to share and implement best practices.

[34] These best practices are posted on the platform by CoP members, but their authors are not always members of the CoP.

The CoP leader constantly re-activates the members' use of the best practices platform. This limits the risk of the platform not being used, and therefore becoming obsolete over time. Regularly sending members to consult the platform contributes to increasing its content and its usage, and ensures that members become informed of the latest released practices.

V.2.4) Risk-free environment

The following points (from the "non-redundant categories", in data analysis section IV.5) explain how a risk-free environment in the CoP has a positive impact on the development and sharing of best practices within the CoP.

1: The CoP as a buffer zone

***a) Definition* and explanation**

CoP members perceive their community as a place where, after a discussion, their work-related problems, worries, anxiety, stress, frustration and anger are absorbed by the group, hence the term "buffer zone". This opportunity for sanction-free discussion encourages members to return to the buffer zone, because they do not feel they are being judged by their peers. This free expression and sanction-free zone is a fertile ground to generate ideas for the development (improvement) and sharing of best practices.

b) Positive impact on development and sharing of best practices

The sharing of problems and anxieties is encouraged, and this atmosphere has a psychological impact on the members who then feel that they are allowed to make errors during group discussions. During these discussions, or one-to-one interactions, criticism of their ideas is perceived differently to the criticism that their superiors or colleagues in their work units offer. Members do not feel looked down upon by superiors and/or colleagues, and are not made to feel diminished by making mistakes, or by admitting that they had encountered problems with practices used in their unit.

The atmosphere is consequently more relaxed and members are able to come up with ideas for new practices and suggestions to improve the existing practices with other participants in the group. As freedom of speech is encouraged, the existence of a best practice could even be discovered during discussions with other group members. This best practice could then be implemented and used by other CoP members.

2: No hierarchy-related pressure

***a) Definition* and explanation**

Within the CoP's boundaries, the members are no longer under their direct superiors' orders, since it is a hierarchy-free zone. Consequently, they are not subjected to the usual daily pressure from their superiors. Taking part in the CoP enables its members to switch from a working atmosphere, in which people are held together by formal rules, to an atmosphere of informal collaboration, in which liberty of expression is encouraged. CoPs have an atmosphere of trust, and, in the best case, friendship and care between members. The CoP is thus a "safety zone" for its members. This lack of hierarchy-related pressure enables its members to be inspired and motivated in terms of best practice-related knowledge, initiatives and ideas to be shared and discussed.

***b) Positive impact on best practice development and sharing*:**

In the CoP, the members have no fear of being judged and/or sanctioned by their direct superiors if they make mistakes, ask naïve questions, or admit that they have gaps in their knowledge. The consequences of such a lack of hierarchy-related pressure are that the members do not fear losing their job, and their position in the organization if they admit being ignorant about certain practice-related topics; and that they develop a sense of total freedom to criticize the practices that they encounter in their respective organizational unit, or in other units, and can openly propose concrete solutions to improve these practices.

Group discussions on how to solve practice-related problems and develop practices flourish when there is no hierarchy-related pressure. This occurs because members feel free to spontaneously share their various insights, as they do not feel that are being observed and judged by superiors. Consequently, they are able to speak free at

meetings and even make mistakes in their reasoning and their suggestions related to practice improvement. This “zero sanction” atmosphere must, however, be coupled with a focus on the fulfillment of business goals, so that the members can seriously and rigorously engage in an ongoing dialogue in respect of effective best practice development and sharing.

3: A “think outside the box” approach

***a) Definition* and explanation**

During CoP group discussions, the CoP leader, or a group of active core members, should encourage the members to think outside the norms of their respective organizational units, in respect of finding ideas and solutions to enhance best practices. The CoP leader, or the core group, should encourage the members to break the barriers of the normal mental processes that they use for the usual daily formalized tasks in their unit. The members will then produce concrete paths that overcome bureaucratic barriers. The central idea is for them to be more creative in the process of developing practices. This approach applies to experimentation with ideas for best practice development. It does not imply, however, that any concrete solution that comes out of a group discussion should necessarily be tested in the field, because the risk of having a practice generate additional costs would be too great. Furthermore, the process of taking a decision to implement a practice is less spontaneous than simply taking a chance.

This “think outside the box” approach should be fully legitimized within the CoP, and take on a concrete form at meetings (and ad hoc meetings) through trial and error sessions. These sessions include the brainstorming of ideas.

b) Positive impact on development and sharing of best practices

When the CoP leader (or the leading members of the core group) starts trial and error sessions, he (they) should stimulate the members to be as experimental as possible in their ways of perceiving and defining how they could improve the best practices in their respective organizational units. At the beginning of sessions, the CoP leader (or leading members of the core group) should spread the word that making errors during

group discussions is not only permitted, but also necessary to find good ideas on how to improve existing best practices.

The brainstorming that occurs at these sessions stimulates the members' spontaneous participation. It forms a fruitful environment for the emergence of spontaneous ideas and creativity that goes beyond normal operational patterns of thought. The strong flow of ideas related to best practice enhancement offers increased opportunity for selecting solutions from the members' various propositions. Consequently, the members could discuss the multiplicity of paths and perspectives that they could explore to enhance the existing best practices under discussion. Through a process of iteration to detect the best ideas for improvement, the group eventually reaches consensus on the best solutions to adopt. The members could export this selection of best solutions to their respective organizational units, and have them on standby to be applied to existing best practices. It is then up to the different organizational units to decide on these solutions' practical application regarding their existing best practices. If the specialists in these units think that these practical solutions will lead to increased costs instead of the existing best practices' improvement, they could decide not to apply them.

V.2.5) Sponsorship

The following points (from the "non-redundant categories" in data analysis section IV.5) explain how concrete action and guidance from sponsorship have a positive impact on best practice development and sharing within the CoP.

1: Sponsor as a control agent

a) Definition and explanation

The sponsor fulfills the task of controlling whether or not the CoP effectively develops best practices over a pre-determined time. In some extreme cases, the sponsor even assigns a minimum number of best practices that have to be developed. He then controls that this number has actually been reached after a decided-upon period (e.g.

every trimester). In general, the sponsor contacts the CoP leader to obtain access to these best developed practices.

Outstanding and innovative practices are reported by the sponsor to the top management. This is a concrete way for the sponsor to promote the benefits of the CoP under his supervision to the organization's upper levels. Recognition from the top management leads to increased financial support. Such control procedures tend to occur in CoPs that are recognized by the top management as being a formal structure within the organization.

b) Positive impact on development and sharing of best practices

The sponsor puts pressure on the CoP leader to evolve the CoP towards the ongoing development of best practices. This is done by controlling the number and the nature of these best practices.

By imposing the ongoing constraint of showing practice-related results at the end of a period, the sponsor stimulates the CoP leader to activate core members to boost the intensity of the knowledge exchanges within the CoP. If the leader is able to activate the connections between members, it is more likely that the knowledge flows' density will increase. However, this alone does not ensure the development of best practices, because it does not guarantee the relevancy of the knowledge contained in these flows. Nor does an increased knowledge flow density ensure that the members will make good use of the knowledge that they receive, which is why the sponsor also controls the practice's performance criteria.

The sponsor therefore not only puts the CoP on trial by controlling the number of developed best practices, but he also challenges the leader to justify these best practices' performance. Typically, the sponsor will assess the best practice according to:

- its punctuality (does it allow time saving?)
- its quality (does it deliver better output or lead to higher revenues?)
- costs (does it enable the organization to save costs?)

To assess practices' performance correctly and to estimate whether they make sense for the organization from a strategic point of view, the sponsor needs to be an expert. Consequently, the leader and core members have the responsibility of filtering the set of identified best practices. Through this filtering, the practices that sufficiently fulfill the

performance criteria are chosen, and are presented to the sponsor at the end of the period.

2: Governance committees

a) Definition and explanation

Sponsors and leaders who are active in the same functional area (e.g., logistic processes, production & maintenance processes) get together regularly to form a governance committee. This committee discusses and assesses the overall activity of the various CoPs in that specific functional area of the organization. The *raison d'être* of such a committee is to regularly assess whether the activity of each CoP makes strategic sense for the organization. A governance committee controls the practices that each CoP has developed and has discussions on which of these practices will decrease costs, or increase the organization's revenues.

In a governance committee, the sponsors jointly assess how the different CoPs fit into the organization's strategy, and how they can consequently be presented to the top management in order to obtain additional financial support. CoP leaders, in their turn, contribute to the committee by providing an operational view of what takes place in each CoP in terms of the developed and most shared best practices.

b) Positive impact on development and sharing of best practices

There are several positive impacts that governance committees have on best practices if they are regularly formed:

1) Opportunity for inter-CoP sharing of a best practice

During committee sessions, a practice that has shown superior results could be identified within one of the CoPs by means of the sponsors and CoP leaders' joint expertise. Potentially, this best practice could be adapted and extended to a larger number of CoPs that are represented in the governance committee by their sponsors and leaders. The possibility of applying that specific best practice to several CoPs enables the organization to save costs, and/or to increase its revenues on a larger scale.

In addition, the governance committee offers CoP leaders an opportunity to share their best practices on how to manage their respective CoP with one another. By doing so, they provide their peers with a set of strengths, weak points, and opportunities related to their CoP as a pragmatic basis for benchmarking the activity levels of the various CoPs. These best practices to actively manage CoPs that are shared between the leaders often belong to the field of knowledge management.

2) Opportunity for increased top management visibility for each CoP

Within governance committees, the sponsors (assisted by the leaders) assess which CoPs are the most strategic for the organization. Accordingly, the committee decides where it is worth convincing top management to invest additional financial and non-financial support. Additional financial support can, for instance, be the financing of members' travel expenses so that they can meet more regularly.

Acquiring supplementary attention from the top management (through a dedicated sponsor's input) makes the members aware that the upper levels of the organization trust them and have higher expectations regarding their results. In this sense, obtaining recognition from the top management encourages the leaders and the core members of these CoPs to maintain active collaboration.

Being assessed on an ongoing basis by top management, and rewarded accordingly, is an ongoing motivator for CoPs to develop and share best practices that make strategic sense for the organization. Another motivating factor is the recognition obtained from other CoPs in the same functional area.

On the other hand, the sponsors in the governance committee could also decide which CoPs do not conform to the corporate strategy in the practices they develop, and therefore decide to no longer support them.

3) Opportunity to merge CoPs

Within governance committees, the sponsors and CoP leaders discuss the activity concerning the developement and sharing of best practices within the various CoPs concerned. If such activities are complementary, the sponsors could come to the conclusion that it makes sense to merge two or three CoPs. This merging is an opportunity for fresh interconnections to occur between members. This is a new source for best practice development and sharing, which can occur between members

with complementary expertise, competencies, know-how, skills, interests, and experience.

4) Opportunities to benchmark activities across CoPs

Via governance committees, sponsors and CoP leaders have the possibility of benchmarking their CoP's activity to that of other CoPs. This provides new ideas for strategic directions that could then be followed. Consequently, this might have an impact on the type of practices that will be developed and shared within the CoP.

3: Sponsor as a multiplication agent

a) Definition and explanation

The sponsor supports the process of the *multiplication* of best practices across the organization through concrete measures. This is achieved by using 3 approaches: a process, a technical and a social approach. Basically, this means that the sponsor supports the replication of best practices across organizational units by convincing the top management to respectively invest in processes, technology and reward systems. In this sense, the sponsor plays the role of a coach or agent of best practice dissemination across the organization.

With the assistance of the CoP leader, the sponsor keeps track of the best practices that enter a multiplication process, and obtains an overall view of the organizational units to which these practices are extended.

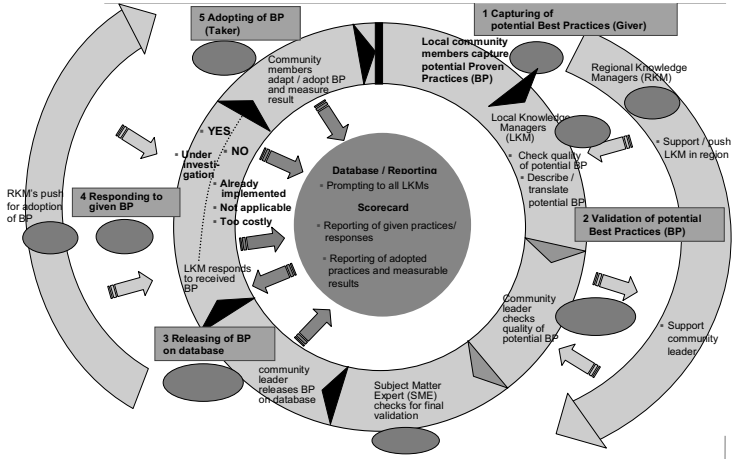
b) Positive impact on development and sharing of best practices

Multiplication of best practices through a process approach

The sponsor supervises an actively managed best practice adoption process. This process is generally divided into 5 phases and focuses on the distribution (giving) and implementation (taking) of best practices within the organization. It occurs across organizational units at the organization's different geographical sites. The process usually involves practitioners such as the CoP leader, members, local knowledge managers (if there are any), regional knowledge managers (if there are any), and/or subject matter experts.

The role of the sponsor is to ensure that the 5 phases of best practices' global adoption process are managed correctly by the different practitioners who participate in the process, that the best practices are used, their performance is measured, and that these best practices are multiplied throughout the organization. This requires the practitioners to report each phase of the adoption process to the sponsor. It also implies that the sponsor should provide operational advice to these practitioners during the different stages of the adoption process.

Figure 21: An actively managed adoption process is structured in 5 phases, focusing on the distribution (giving) and implementation (taking) of best practices (BP)



1) Capturing of potential best practices

This step starts with the local CoP members who capture potential best practices. The potential best practices are submitted to local knowledge managers (if there is such a function within the organization), or to local managers, who are acquainted with the CoP's practices. These local (knowledge) managers check the potential best practices' quality (in terms of their effectiveness and efficiency). They then describe and translate the best practices' potential into an explicit form. These practices' functioning and characteristics are presented in an explicit format, and their potential benefits are explained in terms of performance: revenue increase, cost reduction,

speed, increase in customer satisfaction etc. At this stage, the CoP leader should ask the local manager to present the potential best practices in a written and oral form. The CoP leader then presents them to the sponsor, who views and assesses the propositions from a corporate strategy perspective.

2) Validation of potential best practices

This step starts with the CoP leader checking the potential best practices' quality by means of the effectiveness and efficiency criteria. To guarantee that his assessments of the potential best practices are carried out objectively, the CoP leader has the option of relying on an expert in the subject matter's opinion and on the final check. Therefore, to increase the probability that the CoP leader validates potential best practices, it is essential that local managers (or CoP members) submit the best possible "entry" in respect of their potential best practices. This is done by being as explicit and clear as possible in the way they present these practices to the leader. Once the final check has been done, and the leader and a subject matter expert have validated the potential best practices, these practices may be called best practices. The sponsor requires the CoP leader to regularly inform him with regard to the strategic measurable objectives that these validated best practices are in line with; how these best practices improve the performance of the organizational units that adopt them, and the validated best practices' knowledge content to ensure that the sponsor has a global understanding of them.

3) Releasing of best practices on an electronic database

At the end of the validation phase, the CoP leader releases these best practices on an electronic database accessible to all of the CoP's members, who are then prompted to use them. Because the CoP leader has to collect the best practices and add them to the CoP's electronic database, he must be a person whom the sponsor and the CoP members can trust. The sponsor should ensure that the CoP leader informs him as soon as the new best practices have been published on the electronic database.

4) Responding to given best practices

To assess the extent to which best practices have been multiplied across the organization, the sponsor and the CoP leader ensure that a reporting system is put into place. The reporting is done via a scorecard system which includes the reporting of *given* best practices containing additional information that specifies who in the organization (and from which organizational unit) has contributed to the best practice database with his own practices, as well as the reporting of *adopted* best practices with information that specifies who in the organization has adopted which best practices, coupled with measured performances that were obtained by using these best practices.

This scorecard system enables the sponsor and the CoP leader to check which given best practices (available on the electronic database) have been adopted by which site in the organization. More precisely, it enables the sponsor to track performance improvements in different organizational units, due to the use of these best practices.

This scorecard is therefore an effective way for the sponsor and the CoP leader to apply peer pressure on the organizational units that have never adopted any given best practices available on the electronic database, as well as enabling the sponsor and the CoP leader to track which best practices must be both adopted by and adapted locally to the different organizational units by tracking the progress and results in these units.

Local managers (who are members of CoPs) respond - either positively or negatively - to the given best practices that are on the electronic database.

A positive response implies that the adoption of one or several of those best practices in the organizational unit is under investigation.

A negative response implies that a given best practice has already been implemented in the unit, or that none of the given best practices are applicable in the unit, or that the given best practices are too costly to be adopted by the unit.

The CoP leader should always require that local managers (CoP members) report the reasons (i.e. technical, financial) why their organizational unit did not adopt any of these given best practices on the scorecard. Once this information is fed back into the scorecard, the sponsor, the CoP leader and other CoP members have a clearer perspective on what the barriers to best practice adoption and multiplication

throughout the organization could be. Consequently, these given best practices can be re-thought – since certain practices still need some technical adaptations to be applied everywhere, or are simply still too costly to be adopted by certain organizational units.

5) Adoption of best practices (by the taker)
At this step of the process, CoP members (takers) adopt the given best practices that are on the electronic database, and, if necessary, adapt them to their organizational unit. The sponsor systematically controls that the CoP leader drives the best practice takers to measure these adopted best practices' performance - if there is an appropriate measurement system. The performance is then reported on the scorecard system. Reporting quantitatively measured performance enables the sponsor, the CoP leader and the CoP members to grasp the financial impact that these best practices have had on the various units that adopted them. By aggregating the results, it is possible to assess the impact of CoPs' activity on the organization in terms of cost reductions and revenue increases. Positive results achieved using these given best practices in different units encourages CoP members to adopt these practices in their organizational unit.

Multiplication of best practices through a technical approach
The sponsor also supports the multiplication of best practices via a technological infrastructure that the higher management provides. Technology-driven infrastructure supports the explicit knowledge contained in best practices.

1) Best practices' electronic platform: The sponsor requires CoP members to index the best practices that they use to accomplish operational tasks on a well-structured IT platform. This electronic platform is shared by various CoPs in the organization. Its members can access it in order to find practices that help them solve problems in a better and faster way. The following example clearly illustrates this approach:
An automobile company has a dozen CoPs distributed across its entire production line. Each CoP's sponsors compel members to index the practices that best perform the production tasks in the production line's various steps (e.g., chassis systems, body exterior, vehicle development, passive safety) on a common electronic database (for all CoPs). The sponsors of the various CoPs require these production practices be

indexed in their most explicit form so that the members of all the CoPs on the production line can access them, and fully grasp their function. Once a member from one of these CoPs adopts a best practice found in the shared database, he can either use it as such for his operational tasks, or he can make some adaptations / enhancements in keeping with the production segment's specifications.

By compelling CoP members to post their best practices on a common technical platform, a sponsor fosters inter- and intra-CoP sharing of best practices. The adaptations and enhancements made to these practices contribute to their development. This way, they become "even-better" practices. In the course of this multiplication process from one organizational unit to another, the sponsor stays focused on the performances that the practice replication brings to the organization: cost reduction, revenue increase, quality increase of outcomes, time saving etc.

2) Benchmarking unit: Another way for the sponsor to foster multiplication of best practices within CoPs is through a *benchmarking unit*[35], if the organization has such a unit.

Specialists in the benchmarking unit collect and compare practices across the different projects in progress within the various organizational units (in the same location, or in different locations). This is done according to various quantitative and qualitative indicators, in order to identify the best practices that have the potential of being multiplied across various projects within the organization.

The sponsor's role is to make sure that the CoP leader obtains these best practices from the benchmarking unit, and to mandate him to transfer them to the CoP members working on similar projects. In this sense, the sponsor can use a benchmarking unit as a source of best practices to be multiplied in similar projects.

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[4]A benchmarking unit can be supported by a "learning & knowledge" department at an upper management level. Its role is to compare the performances of the different practices used in the organization. It indicates to what degree there is a culture of knowledge sharing across departments and an ongoing collecting of best practices. In this sense, it also has a supervisory role.

Multiplication of best practices through a social approach

1) Publicizing the success of the CoP

The sponsor promotes his CoP's benefits to the management boards of the organization's various subsidiary companies. The idea is to get the management boards to buy into the CoP concept so that they will drive their company's employees to join the CoP, in order for these employees to gain access to a supportive network that helps solve problems related to daily tasks. These potential new members (possibly very qualified employees) are directed towards the CoP as long as the management boards promote the CoP within the various subsidiary companies in a way that makes them seem attractive. These newcomers may have best practices that should be shared with other members, because of the superior performance that they generate. The new members participate in developing best practices with other peers in the CoP who have complementary skills and experiences.

2) Recognition and reward systems

As a spokesman for top management, the sponsor has an important role to play in recognizing CoP members who have made exceptional contributions in terms of best practice development and sharing, and in rewarding them accordingly. Usually, top management executives announce recognition (non-financial) and rewards (financial), and publicized them throughout the company. A recognized and rewarded member therefore gains renown and credibility within the organization, and becomes a person to whom others refer in respect of a certain type of practice. This normally boosts this member's motivation to keep up his best practice-sharing activity with other CoP members. It also provides other members of the organization with a benchmark specialist from whom they can extract best practices.

There are, however, some crucial aspects that have to be respected in order for the rewarding system (financial) to have a proper motivating effect on members. If these points are not respected, the rewarding system may become a barrier to best practice sharing and development.

To start off with, the top management must be careful not to merely install a pay-for-performance system (extrinsic motivation). Indeed, this could lead CoP members to lose sight of best practice sharing's benefits for their organizational unit, and to focus on monetary issues instead. By merely focusing on a financial approach, the top

management creates distorting incentives, such as the members being tempted to share and implement practices in situations which are no longer appropriate for them, since their main short-term preoccupation is to demonstrate their financial performance and results to the top management. They will therefore not take the necessary time to focus on the practice's longer-term process improvement. Furthermore, if the financial reward is closely associated with a specific definition of a best practice, the members might also be discouraged from experimenting with improvements to the practice.

The top management should consequently balance financial incentives with incentives linked to intrinsic motivation of CoP members to drive them to develop and share best practices across their respective organizational units. These intrinsic incentives should be linked to higher empowerment and job satisfaction. The sponsor should, for example, report to the top management when a CoP member has shared a best practice with other members, and this practice has led to superior results within different organizational units across the group of companies. In this case, the top management should not only reward that employee financially, but also acknowledge that employee for his/her contribution by empowering him/her with more job responsibilities such as job promotion, or a proposing that he/she could participate in a special project.

The top management and the sponsor should also acknowledge members who have experimented and improved practices, or even (in some cases) made errors in doing so, better. Indeed, the top management and the sponsor must also ensure that CoP members know that the benefits related to the failure of a practice can also be recognized, because they are also a learning objective. Through this recognition system, the sponsor attempts to place practices within a constant redefinition process by recognizing and rewarding members if they experiment with them and redefine them.

During periods of organizational reorganization and downsizing, it becomes even more crucial for the top management and the sponsor to demonstrate recognition and to reward CoP members for their best practice sharing activities. Indeed, during these periods employees fear for their job security and tend to become reluctant to share knowledge and best practices across the organization asthey perceive this sharing as a loss of competitive advantage over any other employee in the organization.

4: Investments in network coordination

a) Definition and explanation

Through the sponsor, the top management provides the CoP with funds for its networking activities. These financial means are placed at the CoP members' disposal to facilitate ongoing interactions. The top management has different measures of investing in the CoP for its networking activities: financing members' traveling expenses so that they can conduct more face-to-face meetings at different sites in the world; providing the CoP with a highly effective IT system to allow members to interact virtually in the best way; providing the CoP with a leader (or several leaders, depending on the size of the CoP) who is paid to coordinate the CoP on a full-time basis.

b) Positive impact on development and sharing of best practices

1) Fund travel expenses and face-to-face events: The sponsor convinces the different subsidiary companies' management boards to invest more funds in traveling and meeting expenses, so that CoP members have more opportunities of meeting face-to-face. By promoting this face-to-face driven culture, the sponsor fosters the transfer of tacit knowledge (contained in best practices) between members. These transfers generally occur during: meetings, tandems (when two employees from different organizational units work together on a common topic, in one specific unit for a limited period of time), collaboration in a project and visits at different company sites to become acquainted with new practices.

2) Provide the CoP with one or several full-time leader(s): The sponsor negotiates with the top management to obtain additional funds to provide his CoP with a full-time leader. Having a person who dedicates 100% of his time to coordinate members with one another fosters the sharing of knowledge and best practices. Best practices are shared and developed on a regular basis if a CoP leader allocates 100% of his time to organizing face-to-face or virtual meetings, or to matching members with complementary competencies.

5: Top management's blessings

a) Definition and explanation

Even though CoP members share best practices across the boundaries of their respective organizational units, barriers that make the sharing process more difficult could remain. To avoid reinforcement of these barriers, the top management should continuously bestow its blessings on the CoP to fully legitimize the process of best practice sharing across units. Top management executives should either give their blessings directly to the CoP core members, or through the sponsor as a mediator.

The reasons for barriers to best practice sharing persisting amongst the members of one CoP are linked to the following elements of organizational culture.

1) Organizational units compete for resources

Due to business units' competition for resources, a CoP member could choose not to be transparent in the process of best practice sharing with another member who is part of a competing organizational unit. He could also choose not to share the practice at all. The fear behind this barrier is related to seeing a competing business unit achieve better performances and subsequently being given a larger budget by the top management the following year. In this sense, an organizational culture that values inter-group competition between units by comparing performances, creates a buffer for best practice sharing across these units.

2) Individual performance is valued above knowledge and best practice sharing

This problem occurs within some organizations, and makes members less willing to share their knowledge, since they may view CoP members as competitors in terms of end-of-year performance achievements.

3) Several different organizational subcultures

These organizational cultures differ in terms of norms and values regarding knowledge and best practice sharing. The process of best practice sharing may be arduous between CoP members from two different organizational units. Indeed, their respective unit subcultures provide two different perceptions of what knowledge should be transferred and managed.

b) Positive impact on best practice development

The top management's blessings on best practice sharing occurs in a culture based on knowledge sharing. The means used by the top management must legitimize the process of best practice sharing between the different organizational units in the CoP members' eyes. More precisely, the top management and the sponsor should direct the CoP members towards risk-taking acceptance in respect of the knowledge they could share with different units' members. In other words, best practice givers must constantly be prevented from believing that the benefits that the receiving units gain from their best practices will be their own unit's detriment.

The top management's blessings could stimulate tolerance towards changes within a unit, since it encourages that unit to use best practices from other units.

The top management has concrete means of demonstrating its blessings in respect of best practice sharing across units. These concrete means motivate CoP members to share best practices with one another, because they prove the top management's full support for the knowledge-sharing process across units.

Top management executives should bestow their blessings on the CoPs, be it at CoP meetings, ad hoc meetings, via the sponsor, or even through newsletters, in the following ways:

- propose financial and non-financial incentives for best practice sharing (between CoP members) across organizational units[36];
- encourage CoP members to formulate measurable objectives in terms of best practice sharing, so they can ultimately demonstrate their positive impact on the organization's results;
- publicize the following benefits that organizational units gain by sending their employees to participate in CoPs throughout the organization:
    - they will be early adopters of innovations, since the employees will have access to innovative practices through their network
    - they will have highly skilled employees, because the employees constantly nurture their knowledge through their network

[36] For details on rewarding system, see sub-section V.2.5: Sponsor as a 'multiplication agent', *Recognition & Rewarding system*

- they will have high performance achievers, because the empoyees have access to the best practices through their network

V.2.6) CoP results

1: Fulfillment of business goals

The following points (from the "non-redundant categories", in data analysis section IV.5) explain in what sense reporting of tangible CoP results for has a positive impact on the development and sharing of best practices within the CoP.

a) Definition and explanation

The CoP's quantitative and qualitative benefits for the organization need to be publicized in respect of the CoP members and the sponsor. The quantitative benefits intrinsically linked to best practices are, for instance, cost reduction, revenue increase, higher effectiveness and speed of operations. The qualitative benefits are, for example, higher client satisfaction, and improved product/service quality.

In this sense, the CoP leader should promote the use of numerical (quantitative) and anecdotal evidence (qualitative) to illustrate that the CoP's activity of developing and sharing best practices has led the organization to superior results. He should therefore make sure that this is illustrated rigorously and palpably to the CoP members and the sponsor — they should know that there is a link between the best practices developed and shared within the CoP and the cost reduction/revenue increase in the organization.

Seize measurable performance

The electronic scorecard reporting system

This system has already been referred to in sub-section V.2.5. Each time a best practice is developed by a CoP member and has led to superior results (e.g., cost reduction, revenue increase, increase in effectiveness and speed, increase in quality and client satisfaction) in his organizational unit, this practice and its achieved

performance should be reported on the system. The CoP leader should encourage the CoP members to illustrate and explain the practice's function in its most explicit form. He should also explain, and rigorously illustrate through a measurement system, how that best practice has led to better results for the organization. Reporting how the best practice leads to superior results can be done by using two major approaches: story telling and feedback on the practice's usefulness.

Illustrate results

Story telling as a key performance indicator

CoP members are encouraged to post their written experiences with a best practice on the electronic scorecard reporting system. In these "stories", the CoP members explain the entire process of how they implemented a practice in their organizational unit, how they used it, and even how they were able to improve it. More specifically, they relate, in an illustrative manner, how they could quantitatively measure the results that were generated through the use of that specific practice.

In the current study, for example, the author found various stories. One related how a CoP of medical doctors was able to reduce their patients' insurance costs by 20% by jointly sharing and developing cheaper and better medical treatments and drug combinations. Another reported how several CoPs of engineers active on an automobile production line were able to reduce an automobile's production cycle time by collaborating in the sharing and development of production practices. Yet another disclosed how computer scientists in a CoP of "technical assistance requests" were able to save at total of 6000 work days per year for the organization - considering the total amount of employees - by developing and implementing an intelligent system of online assistance, and saving the organization significant costs. A fourth related how a CoP of medical care-givers,(paramedical personnel) spread across several Ukrainian clinics, had, within 3 months, saved 1500 new born babies from dying of hypothermia by sharing the best massage techniques to provide heat to the babies' bodies — a technique that some of the care-givers had developed in one of the clinics. A final story revealed how a CoP of insurers in a global re-insurance company was able to cut losses of several million US dollars per year by sharing past errors made with clients, which helped members develop and implement better business decisions.

Reporting of achieved operational objectives

Reporting of CoP members' feedback as a key performance indicator

When a best practice is taken from a CoP's electronic database, the "taker" is first encouraged to formulate a request to its "owner". The owner of the best practice is asked to provide knowledge regarding its implementation and operation. Once the taker has implemented the practice in his organizational unit, he must be encouraged to post his feedback on the key performance indicators that he assessed during the utilization of this best practice on the CoPs' electronic scorecard reporting system. The feedback usually contains information on: how much time and money the practice enables the organizational unit to save (quantitative measure); how much money is earned due to the use of the practice (quantitative measure); how the practice improves the quality of the outcome (qualitative measure); and how the clients' satisfaction is improved (qualitative measure). This information has to show how the best practices developed by the CoP have fulfilled the initial CoP objectives. This feedback also contains explanations on how the best practice taker measured the key performance indicators in his organizational unit.

To encourage best practice takers to insert their feedback into the CoP, the CoP leader should determine a reward system.

Reporting results at meetings and at ad hoc meetings:

Illustrating the CoP's superior results in an electronic reporting system is not all that should be done. Each time a best practice developed by a CoP member (or shared between members) has led to superior results in an organizational unit (i.e., cost reduction, revenue increase, increased effectiveness and speed, increased quality and client satisfaction), it should be reported orally at CoP meetings and ad hoc meetings. It is the CoP leader's responsibility to ensure that tangible outcomes are regularly reported to CoP members and to the sponsor. This is the reason why the best practice instigator(s) should be responsible for illustrating and explaining the practice's function in its most explicit form to others, and for explaining and rigorously demonstrating how the best practice has brought better results for the organization through a measurement system.

A great advantage of face-to-face meetings and ad hoc meetings is that the degree of interaction is high. During discussions, the multiplicity of the members' viewpoints, and their extensive feedback may lead to a re-modeling of the practice initially presented by its instigator, in order to make it an even-better practice.

b) Positive impact on best practice development and sharing

The CoP leader should ensure that "success stories" (qualitative illustration of CoP results) and quantitative data (seizing of performance measures and reporting of achieved operational CoP objectives) relating to the CoP's tangible outcomes are reported 1) in an electronic scorecard reporting system, and 2) at regular and ad hoc meetings. By combining these two approaches, the CoP leader most effectively illustrates that the CoP contributes to the fulfillment of business results to the CoP members and the sponsor – by regularly seizing measurable performance, illustrating results of the CoP, and reporting the achievements of the CoP's operational objectives.

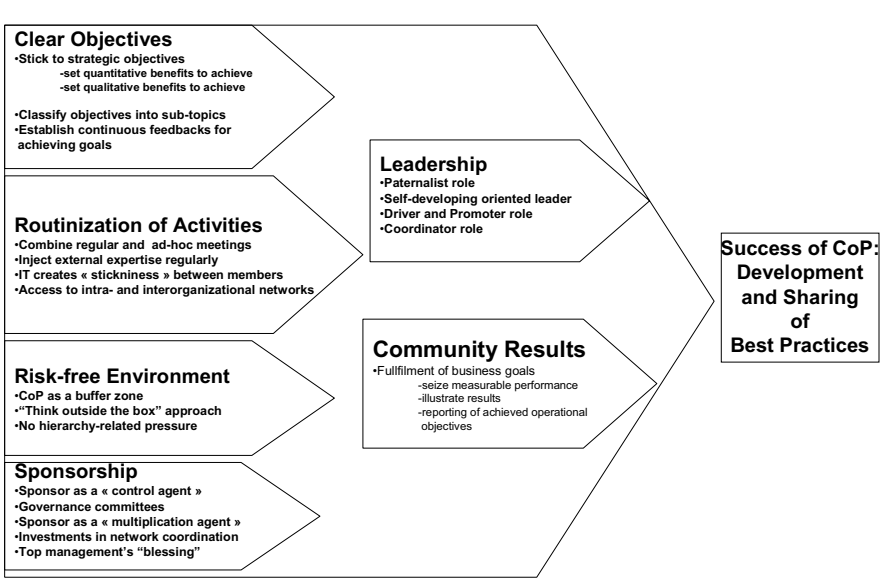
The aim of regularly illustrating the CoP's success stories is to positively influence the CoP members' motivation to participate in the CoP by providing them with quantitative or qualitative evidence that their network did have a positive impact on their organization's business results. In addition, it provides the sponsor with quantitative and qualitative evidence that the CoP is fulfilling its strategic objectives so that the top management can maintain, or increase, its investments in the CoP.

The next part begins with a brief summary of the 2nd set of research findings. This is followed by a discussion of the implications of the research, with links being drawn between the 2nd set of research findings and the existing theories. The findings' contribution to the existing literature is also discussed, and suggestions for future research paths presented.

V.2.7) Summary of the 2nd set of research findings

The 2nd set of findings (*determinants of success*), derived from the research model's 6 initial success factors ("steering wheel to manage CoPs"), that enable a community of practice to develop and share best practices can be graphically visualized as presented in Figure 22.

Figure 22: Summary of 2nd set of research findings



Clear Objectives

Three determinants of success were identified in respect of the setting of clear objectives. The following points explain the links between this and the development and sharing of best practices within a CoP.

First, *aligning a CoP's objectives with the organization's corporate strategy* gives the members a clear motive for actively participating in a CoP. It is also an incentive for the top management to support a CoP's activity, because the CoP's objectives indicate that it has a clear mission to develop and share practices that will contribute to lower costs/increased revenues for the organization once they have been deployed and multiplied across the organization.

Setting strategic objectives implies that *quantifiable indicators, which can be used to measure the organizational units' performance, are being set and specified*. In turn, performance is achieved by using best practices that have been developed and shared in a CoP within a defined period.
Since objectives evolve over time, they should be regularly submitted to the top management in the form of a formal document. This enables the top management to check whether a CoP objectives are in accordance with the corporate strategy, or whether they require modifications.

Second, it has been proved that *classifying objectives into sub-topics* gives CoP members absolute clarity regarding the goals that a CoP must achieve. A taxonomy of objectives gives them a precise orientation to follow by proposing different areas in which they must develop and share best practices.

Mapping out the objectives in such a way explicitly presents and details a range of CoP sub-topics into which the members can invest their knowledge in order to develop best practices, and/or share the best practices they use with other members.

Classifying objectives into sub-topics also exactly clarifies the precise fields in which the upper management expects CoP members to concentrate their efforts to develop and share best practices.

Third, *establishing a continuous feedback cycle for the revision of objectives with the core members* increases their participation in CoP activities. First of all, the fact that the CoP leader sets a CoP's objectives and revises them on an ongoing basis with core members ensures that everyone's personal objectives are taken into consideration. It also ensures that the core members know where the objectives that were set for a CoP come from. Secondly, the continuous revision of objectives re-

activates the interactions between the core members, thus giving a CoP momentum. This ensures that it adapts to its area of activity's evolving environment by welcoming the members' fresh ideas. Thirdly, revising the objectives in a participative way is also a means to maintain ongoing discussions on problems and possible enhancements related to a CoP's activity.

The above reasons ensure that core CoP members participate with a greater sense of belonging, and a greater interest, and that their belief in the CoP's usefulness in their daily operational activities is increased. They become more integrated into the CoP's activities, and naturally shift towards the process of the development and sharing of best practices with their peers.

Routinization of activities

Four determinants of success were identified in respect of the routinization of CoP activities. The following points explain the links between the routinization of CoP activities and the development and sharing of best practices within the CoP.

First, CoPs *combine regular and ad hoc meetings*. In between regular meetings, smaller reunions between members are organized in the form of problem-solving workshops in which members participate interactively in round-table discussions. CoPs regulate these 2 types of meetings in order to give the network's activity a regular rhythm, in other words, to have the members discuss matters face-to-face in order to share their best practices and develop them further. Both approaches are necessary for the development and sharing of best practices to occur.

Second, *knowledge related to the CoP's practice is regularly imported from experts outside the CoP*. These external experts belong either to the organization, or to other organizations. Their inflows of fresh knowledge and external best practices bring new perspectives to the CoP, on which the members can reflect in their quest to further develop the best practices in their own industry. These external experts also provide new perspectives for solving problems in the CoP. This prevents the CoP members

from overwhelming one another with the rigid mental schemes that are usually characteristic of the subsidiary company (or organization) to which they belong.

Third, *an information technology infrastructure creates "stickiness" between CoP members*. However, it only creates bonds between CoP members if there are already solid social links. This means that an IT infrastructure's effective and efficient use in terms of best practice sharing and development only occurs if members are used to interacting with one another. If this is the case, members are naturally led to respond to electronic requests sent to them by other members. Electronic connections (e-mail, yellow pages, instant messenger system, internet protocol telephony, conference calls, videoconferencing, web-casts) serve to convey requests, information, and knowledge related to the CoP's practice. As long as there are bonds between members, these tools are effective and efficient in conveying information and knowledge contained in best practices in the form of explicit documents/texts, and dialogues.

Fourth, getting *access to intra- or inter-organizational networks* through a CoP has shown to increase members' active participation in the CoP. Through other CoP members, they obtain access to practice-related experts outside the CoP's boundaries. These experts are often holders of well-documented best practices that have a great potential to be shared and developed further if they could penetrate the CoP's boundaries. Members use one another as "swiveling platforms" to be directed towards these experts located elsewhere in the organization, or outside the organization. Contact with experts within the organization's boundaries enables internal benchmarking of best practices, while contact with external experts enables external benchmarking.

Leadership

Four determinants of success were identified in respect of leadership. The following points explain the links between an active leadership and the development and sharing of best practices within the CoP.

First, *the CoP leader has a paternalist role*. This translates into several actions that positively impact the development and sharing of best practices.
By taking on a father figure role, the leader provides members with assistance during face-to-face meetings/ workshops and conference calls; takes on a best practice editor role (making sure members document best practices in explicit documents); reports members' good performances to the members' superiors in their subsidiary company; decides on themes and presentations; identifies specialists within the CoP; and, finally, must have sufficient credibility to become the person to whom everyone in the network refers for members to consider him reliable.

Second, *the CoP leader is a self-developing oriented*. The idea is that the leader's active participation in the CoP is motivated by a need to fill his own knowledge gaps related to problem solving in his daily operations. This gives him the ongoing motivation to actively search for knowledge and best practices within the CoP. He therefore naturally stimulates activity within the CoP by constantly pushing other members to share their best practices with him.

Third, *the CoP leader has a driver and promoter role*. He makes the CoP as attractive as possible for the members and potential members by structuring it into different sub-topics in a very distinct way. The CoP is divided into a number of sub-CoPs with each sub-CoP managing and indexing best practices relative to a specific part of the CoP's general practice. With such a clustering, members enter different "hubs" each time they search for a best practice related to a specific CoP knowledge area. This way, members and potential members find their way through the CoP much more easily when they search for a practice to apply in a specific field in their daily operations. Simultaneously, a member (or a potential member), who has a best practice that could be used to increase performance (cost, time, or quality) in a specific situation, knows exactly in which sub-CoP to post it so that the other members can access it.

Fourth, *the CoP leader has a coordinator role*. He coordinates the CoP members' competencies. His role is to connect knowledge-givers with knowledge-takers, which builds and reinforces a culture of best practice sharing within the network. This intermediary position enables him to redirect members towards one another to share their knowledge and develop best practices together. This occurs over time, since he

builds knowledge on where to find existing best practices in the organization (names and locations of best practice holders). The CoP leader is then more effective in the connections he establishes between members, and makes knowledge-relevant matches between members. He connects members who need one another's know-how to jointly develop existing practices, and possibly improve them through interactions.

Risk-free environment

Three determinants of success were identified in respect of a risk-free environment. The following points explain the links between a risk-free environment and the development and sharing of best practices within a CoP.

First, a *CoP is perceived as a "buffer zone" by its members*. It is a place where their work-related problems, worries, anxiety, stress, frustration and anger are absorbed by the group. This opportunity for sanction-free discussion encourages members to return to the buffer zone, because they do not feel they are being judged by their peers. This free expression and sanction-free zone is a fertile ground for generating ideas for the development (improvement) and sharing of best practices.

Second, within the CoP's boundaries, *members feel no hierarchy-related pressure*. Since the CoP is a hierarchy-free zone, members are no longer under their direct superiors' orders and are not subjected to the usual daily pressure. Members therefore switch from a working atmosphere, in which people are held together by formal rules, to an atmosphere of informal collaboration in which liberty of expression is encouraged. The CoP is thus a "safety zone" for its members. This lack of hierarchy-related pressure enables its members to be inspired and motivated in terms of best practice-related knowledge, initiatives and ideas to be shared and discussed.

Third, the CoP enables members to *adopt a "think outside the box" approach*. Members are encouraged to think outside the bureaucratic norms of their respective organizational units, and to break the barriers of the normal mental processes that

they use for their daily tasks in respect of finding ideas and solutions to enhance best practices. Consequently, members produce concrete paths that overcome bureaucrative barriers, and are more creative in the process of developing practices. This approach applies to experimentation with ideas for best practice development.

Sponsorship

Five determinants of success factors were identified in respect of the sponsorship of CoPs. The following points explain links between sponsorship by top management and the development and sharing of best practices within the CoP.

First, *the control* that the sponsor exercises in respect of the quality and quantity of the best practices that the CoP members developed, puts pressure on the CoP leader to fulfill his role efficiently. Before he can report to the sponsor, he has to search for the best practices that the CoP members developed in their respective organizational units, and then capture them in the CoP's database so they can be shared with the rest of the CoP.

Second, *governance committees* – constituted of CoP sponsors and leaders in the same functional area - influence CoPs' activities. Through comparison of key performance indicators related to the best practices' quantity and quality, the governance committees decide which CoPs are of strategic importance for the organization and in which proportion they should therefore benefit from the top management's support.

Third, the sponsor can play *the role of a multiplication agent* of best practices throughout a CoP and the organization. This role is sub-divided into 3 approaches: process, technical, and social approach.
The "process approach" implies that the sponsor supervises an actively managed best practice adoption process. This adoption process comprises the capturing and validation of best practices, their release on an electronic database, members' response to these practices, and, finally, the adoption of these best practices by members.

The “technical approach” implies that the sponsor provides a CoP with a technological infrastructure. This technology-driven infrastructure supports the explicit knowledge contained in best practices. It can either be a best practice electronic platform on which members from different CoPs can post their organizational unit’s best practices, or it can be a benchmarking unit that provides CoPs with best practices databases and key performance indicators. These databases and key performance indicators are established by specialists who search for best practices across the organization, compare, and classify them. These databases can be a valuable source for CoP members who extract best practices from them and then share these practices with their peers in the CoP.
The “social approach” first implies that the sponsor publicizes the CoP’s success by making the CoP’s benefits known to the management boards of the organization’s various subsidiary companies. The idea is that the management boards buy into the CoP concept and encourage their company’s employees to join a CoP by giving them more time to participate. Secondly, the social approach translates into recognition and reward systems for members who make exceptional contributions in terms of best practice development and sharing.

Fourth, the sponsor ensures that the *top management’s investments in network coordination* benefit his CoP(s) on an ongoing basis. Such investments can be in the form of funding of travel expenses or of face-to-face events; it can also be in the form of providing the CoP with one or several full-time leader(s).

Fifth, *top management’s “blessings”* are important for a CoP. There are still barriers that make the process of sharing best practices more difficult between members from different organizational units. To avoid reinforcement of these barriers, the top management should continuously give its blessings to a CoP in order to fully legitimize the process of best practice sharing across units. Top management executives should either give their blessings directly to the CoP core members, or through the sponsor as a mediator. The reasons for barriers to best practice sharing persisting amongst members of a CoP are linked to the following elements of organizational culture: organizational units compete for resources, individual performance is valued above knowledge and best practice sharing, and there are several different organizational subcultures.

Community results

A main determinant of success, divided into 3 sub-parts, was identified in respect of CoP results. The following points are the links between the illustration of CoP results and the development and sharing of best practices within the CoP.

First, *the fulfillment of business goals* needs to be publicized in order to justify the existence of the CoP in the organization.
Second, *measurable performances are seized and reported* in documents.
Third, *through numerical (quantitative) and anecdotal evidence (qualitative)*, the CoP leader rigorously and *palpably illustrates* to the CoP members and sponsor that the CoP's activity of developing and sharing best practices has led the organization to superior results.

The aim of regularly illustrating a CoP's tangible outcomes is to positively influence CoP members' motivation for participating in a CoP by providing them with quantitative or qualitative evidence that their network does have a positive impact on their organization's business results.

The sponsor needs to be provided with quantitative and qualitative evidence that the CoP is *fulfilling its strategic operational objectives* so that the top management can maintain, or increase, its investments in the CoP.

V.2.8) Discussion on the 2nd set of research findings and future research propositions

Clear objectives

Past research suggests that CoPs need to *understand* the knowledge that is strategically important to the organization's activity and set their objectives accordingly (McDermott, 1999, 2000; Edmundson, 2001; Wenger, 2004). Authors also recommend setting objectives to *leverage* knowledge that has a significant impact on the organization's activity (Vestal, 2003; McDermott, 2000). More specifically, Edmundson (2001) suggests that CoP objectives must be determined with the aim of improving CoP members' competencies, so that they can improve the organization's business results and identify areas where best practices can be developed. In that sense, CoP objectives need to translate a compelling value proposition to be appealing to members (Vestal, 2003).

However, past research has proved inconclusive in presenting a specific path to follow for the elaboration and structuring of objectives. Instead, researchers tend to recommend a high level of abstraction when setting CoP objectives (Edmundson, 2001), such as "improve knowledge sharing through networking, knowledge creation and community knowledge repositories". There is a clear tendency to remain at a general level, by sticking to a criterion of "form" of objectives, instead of one of "content". This awareness partly finds its roots in McDermott's (1999) view. The author claims that at the heart of a team is a set of interdependent tasks that lead to clear objectives, while at the heart of a CoP is the knowledge that members share and develop. Consequently, objectives remain as general as possible so that the spontaneity of knowledge creation is not constrained by any limits set by precise objectives.

There are, furthermore, two poles in researchers' approaches. Some defend a position according to which CoPs should remain an informal structure in the organization, and the organization must let them evolve via a bottom-up approach (Fontaine, 2001; Vestal, 2003). Others claim that these communities should only develop and share knowledge and practices that are of strategic importance for the organization's business, and these communities therefore need the top management's ongoing guidance and sponsorship (Edmundson, 2001; Wenger 2004). Within the context of

this debate, past research has not been conclusive in explaining how performance indicators attached to CoP objectives could possibly encourage members to participate in the development and sharing of best practices, and how they could impact top management's decision to invest in such communities.
The present author's research analyzed this issue in depth with practitioners, and gained insight into the positive effects that performance indicators have on CoP members. By taking the analysis further, an opportunity arises to discover and understand what the key strategic elements are, content-wise, that have to be considered, in order to make objectives as appealing as possible for members when they join the CoP. This is a path that is open to further research in this field. Determining appealing objectives may, however, prove to be a challenging issue in the light of the fact that CoP participation occurs parallel to members' formal task in the organization.

Vestal (2003) suggests that CoPs should provide an outlined, easy-to-follow knowledge sharing process as part of their objectives, so that members "know how, what, and when to share". The author doesn't provide a pragmatic explanation on how to provide such a process. However, his comments suggest that CoPs should structure their objectives in such a way that it provides the members with a clear and pragmatic orientation in respect of the achievements of CoPs' goals. One of the present author's findings bridged that research gap by recommending that CoPs classify their objectives within sub-topics, so that members know precisely what a CoP must achieve. The insights that this author received from practitioners during the current research make it possible to explain how a taxonomy of objectives motivates CoP members to actively participate in developing and sharing best practices across organizational units.

Past research on CoPs has also failed to provide clear explanations on whether to involve the sponsor, the leader, or the members in the setting of CoP objectives. The literature does, however, provide the reader with hints in this regard. Wenger/Snyder (2000) claim that the members need to feel personally connected to CoPs' area of expertise and interest once it has been defined. If they do not, they will not commit themselves to a CoP's work. McDermott (1999) states that it is important for the CoP leader to ask himself in how far the knowledge that is developed within the CoP is

relevant to the members' everyday work. These statements suggest that there is a path to explore regarding the implication for members in respect of the revision of CoP objectives. Indeed, one of the current author's findings suggests that core members should be involved in the revision of objectives, meaning that their feedback should be regularly obtained in respect of the ongoing re-modeling of these objectives. This would explain in how far the members' regular involvement in the revision of objectives positively impacts their motivation to actively develop and share best practices across organizational units.

This study's findings also confirm that organizational learning that has no clear direction and purpose is not very helpful (Garvin, 1993), which establishes a link between organizational learning and knowledge management. The results of the present study suggest that organizational learning needs to be managed. Indeed, by setting clear objectives, CoPs conform to the claim by Probst et al. (1999) that the goal of knowledge management is "to improve organizational capabilities through better use of the organization's individual and collective knowledge resources". The resources within the investigated CoPs are also in line with these authors' requirements by including capabilities, experience, routines, norms, and technologies.

Through the setting of clear objectives, CoPs are also in line with Garvin's (1993) argument that there should be a correlation between the learning process occurring in the organization and the knowledge goals. The setting of clear objectives for CoPs underlines the need to develop mechanisms to transform this learning into knowledge building. As claimed by Garvin (1993), these mechanisms, which are put in place to improve learning, can be assimilated into knowledge management tools. As this study's results show, CoPs fulfill the criteria for assimilation into a knowledge management tool, as their members revise the learning objectives that translate into organizational knowledge goals.

The results furthermore show that CoPs with clear objectives are in line with the definition by Probst et al. (1999) of "knowledge goals" in their model "Building Blocks of Knowledge Management". These authors claim that practitioners need to incorporate knowledge goals in their organization's strategic planning. They therefore claim that the start of knowledge management is to be found in the process of defining knowledge goals. This study confirmed that this holds true for CoPs as well, as their objectives are specified (with different degrees of clarity), thus providing practitioners with a direction to follow for. By setting clear knowledge goals, organizational learning

can be truly proficient (Probst et al., 1999). As claimed by Probst et al. (1999) with regard to the organization as a whole and from a knowledge management perspective, the findings show that the starting point for creating knowledge in CoPs is also for the members to decide what areas of knowledge they should develop.

Routinization of activities

Authors often stress the importance of designing CoP meetings and web spaces to invite discussion about cutting-edge issues (McDermott, 2000; Wenger et al, 2002). Breu/Hemingway (2002) claim that between meetings, coordination tasks are mainly supported by e-mail, and that CoP members acknowledge that communication media like the telephone or e-mail are useful to support group activity. However, the authors add that members consider face-to-face interaction and informal discussion "as the most effective form of communication when it comes to sharing and creating knowledge".

The results of this study show that there are elements of routinization that allow organizations to learn, but which are not directly dependant on individual learning. The elements that were found in the study are, as Jonczyk (2001) claimed, shared interpretation and institutionalization. Indeed, routinization of events includes shared interpretation between CoP members, which means that routinization is in line with organizational learning rather than individual learning, since there is a shared understanding of events and information (Garavan, 1997). This study shows that the routinization of events (i.e. meetings) enables a shared understanding between members and knowledge creation through group communication, knowledge comparison and joint interpretation (Nothelfer, 1999). Furthermore, routinization is in line with organizational learning, because individual reflections and insights are picked up in dialogues, during which they are discussed and adapted, and end up resulting in new collective convictions (Srikantia/Pasmore, 1996).

The present study also shows that routinization results in organizational learning, and not only in individual learning, because it includes "institutionalization". Institutionalization occurs in a group as soon as individual knowledge is converted into organizational knowledge, as it is then exchanged and accepted by others (Duncan/Weiss, 1979). More precisely, by analyzing the routinization of activities in-depth, it becomes clear why CoPs bridge the gap between organizational learning and individual learning, and that - as teams - they are central learning components within organizations. Indeed, at a collective level, learning emerges from the interactions between collective knowledge and individual knowledge (Spender, 1996) that occur at the level of social processes during routinized activities. The study shows that routinized activities can also be regarded as a *microcosm* of organizational learning

(Senge, 1992). The findings on routinization are moreover in line with Senge's (1991) view on teamwork, which he characterizes as "critical for creative thinking, for discovering new solutions no one individual would have come to on his own". Studying routinization at the level of *ad hoc* meetings within CoPs confirms Nonaka's (1995) view that a knowledge-creating spiraling process occurs in groups of a limited size – 5 to 15 individuals. The insight that the author of this thesis gained into regular *ad hoc* meetings between CoPs' members also highlighted the four modes of knowledge conversion, i.e. Nonaka's (1995) knowledge spiral (socialization, externalization, combination, internalization). These four modes were described by the CoP leaders when explaining how practitioners discussed and enhanced best practices at meetings through the regular exchange of experiences and insights.

The results of the research reveal that within CoPs routinization is intrinsically linked to the five main activities Garvin (1993) claims a learning organization is skilled at achieving: systematic problem solving, experimentation with new approaches, learning from the experiences and best practices of others, and transferring knowledge quickly and efficiently throughout the organization.

Vestal (2003) raises the fundamental question whether CoP members organize sufficient face-to-face or voice-to-voice meetings within the six first months of the group's launch and after. He adds another fundamental question which is: "are there enough actions and activities for this group to become accustomed to working together to solve problems?". McDermott (1999) stresses the importance of "helping people "pull" insights from each other when they need it, rather than "pushing" it to them". The author claims that CoP members learn best when they "pull" information or knowledge, rather than having it "pushed" to them at meetings or by e-mail. He adds that whether using face-to-face forums or IT, knowledge and best practice sharing should respond to a pull.

Even though authors recognize the importance of organizing regular face-to-face events between members, researchers have not yet focused special attention on finding the right equilibrium and the right content links between regular and ad hoc meetings. In this sense, the author's finding "combine regular and ad hoc meetings" contributes to the literature on CoPs by proposing a systemic approach to this relation: it explains that the contents of regular and ad hoc events should influence each other

positively over time, and that this complementarity and reinforcing effect are necessary for developing and sharing best practices. This is in line with Probst et al. (1999), who adopt a knowledge management perspective, and claim that "best practices can only be spread through different areas of a company if there is systematic sharing and distribution of knowledge".

Moreover, this study's findings confirm the view of Probst et al. (1999) that "although it is possible to hold team meetings in cyberspace (in this case, CoPs), they aren't a substitute for direct personal contacts". However, further empirical research should be conducted to find the best fit regarding regular and ad hoc activities in order to maintain the right balance between these events. Furthermore, the finding "access to intra-/inter-organizational networks" goes further than has been explored in past research. Numerous authors have stressed that a main outcome for members to regularly participate in a CoP is to have access to knowledge that other CoP members, who are spread across organizational units, have (Wenger et al, 2002; Breu/Hemingway, 2002; Peltoneu/Lämsä, 2004). The current research investigated this aspect in more depth. It not only reveals that members are motivated to actively take part in CoPs because they have the opportunity to discover, discuss and share best practices with experts, but that they come into contact with these experts through the CoP members. In fact, this investigation has revealed that these experts are often not even part of the CoP, nor not necessarily part of the organization. These people have great value for the CoP members because they often belong to their own network of experts. Therefore, CoP members value them as entry points to other networks from which they can potentially extract knowledge and best practices.

Leadership

Many authors have stressed the importance of having a skilled leader to activate the CoP and to assist members with their numerous requests (Wenger/Snyder, 2000; Edmundson, 2001; Fontaine, 2001). Vestal (2003) has claimed that the leader has to have the necessary motivation to build his skills, in order to assist his CoP. McDermott (2000) claims that to be successful, a CoP leader must have technical knowledge about the field, but that his primary job is to connect people. The author stresses that

the leader must be an “engineer with social skills” who visits CoP members, finds out what they are working on, and introduces them to other members for them to exchange ideas and knowledge. He adds that the leader should encourage the senior members to think aloud about topics for which they have no answer, and “press people for the thinking behind their observations”.
The current research went in this direction and has enabled this author to discover aspects of the CoP leader that had not yet been explicitly pointed out in past research. The success factor revealed by the present study - “self-developing leader” - stresses the importance of having a knowledgeable person as a leader. It does, however, add that his knowledge should absolutely be coupled with an intrinsic motivation to constantly learn about the CoP’s topic. This argument emphasizes that his degree of knowledge of the topic must be well balanced with his thirst for learning. Further research should focus on depicting the profile of such a well-balanced leader. The results of such an investigation could serve as criteria for organizations in the processes of choosing the right CoP leaders.

The current research findings also suggest the necessity of having a leader implementing concrete measures to promote a CoP’s benefits – notably by dividing it into sub-CoPs, so that members can access to specific knowledge areas even more easily. However, there still is great potential for further empirical research to discover and develop effective measures of promotion. This could lead to the building of innovative models and structured guidelines to serve CoP leaders’ practical purposes.

Another area that deserves further investigation is the coordinator role that the CoP leader fulfills. Past research is inconclusive regardng what the current findings have identified as the “tele-marketer” approach – an aprpoach that should be adopted by the leader when coordinating knowledge between CoP members. Further research should concentrate on understanding the channeling that the leader undertakes in his communication processes to reach the members who possess the relevant knowledge, and to redirect this knowledge towards the ones who need it at that precise moment. In other words, how the CoP leader can optimally match the CoP members’ supply of and demand for knowledge. This research could be made possible by using social network analysis approaches (Burt, 1992).

As identified by the study, the different roles played by the CoP leader (coordinator, promoter, paternalist, self-driven) help overcome the 4 remaining problems related to the transfer of best practices as stated by Szulanski (1996) and O'Dell/Grayson (1998):

(1) The organization members often possess knowledge that they don't know how to apply or utilize in a practice. It is therefore difficult for the holder of this particular knowledge to transfer it to a receiver, if he is unaware of possessing it. The findings show that by being an expert and a coordinator between CoP members, the leader is able to detect who the holders of valuable knowledge for the development of practices are, and he/she then connects members needing that knowledge with experts holding the knowledge.

(2) A best practice can exist within an organization without its potential receivers being aware of its existence, knowing where to find it, or knowing how to look for it. The findings show that by being a promoter of best practices within the CoP, the leader makes these best practices as visible as possible within the CoP (i.e. by dividing the CoP into sub-CoPs, databases), so that as many CoP members as possible become aware of these practices.

(3) Tacit knowledge – knowledge resulting from experience and intuition – constitutes 80% of the real-value knowledge which is contained in a practice. Since this type of knowledge is very difficult to express and to codify, most of the valuable knowledge usually stays with the transmitter while the receiver often only gets 20% in a codified form. The findings show that through his/her coordinator and self-driven role, the leader is able to assist the transmitter with the explanations he/she gives the receiver regarding the usage of the best practice. Through in-depth discussions (face-to-face, telephone), tacit knowledge is transmitted more easily.

(4) Even though the transfer of a best practice does occur, it is sometimes difficult to sustain the use of this practice through time – either though a lack of motivation, interest, training, leadership, connections between the members etc. In practice, there is a real risk of know-how loss during tacit knowledge's conversion into explicit knowledge. There isn't as yet an acceptably established procedure to actively manage best practices within the organization. The findings show that through his/her promoter role, the leader is very active in the codification of best practices before they enter common databases. Thanks to his/her high degree of expertise, the leader is able to assist the CoP members when they codify the tacit knowledge contained in their best

practices, before they put them onto the CoPs' virtual platform in the form of documents. The leader is also active in revising the content of the documented best practices that are posted on the CoP's website, so that the documents are comprehensible for members accessing them.

Risk-free environment

The risk-free environment aspect in CoPs has not as yet been fully considered by authors. However, some authors do describe certain aspects of it. For instance, Breu/Hemingway (2002) claim that CoPs are an "especially valuable opportunity to express ideas and test ideas in an informal, risk-free environment". McDermott (1999), on the other hand, stresses that many CoPs have an emotional component for their members, but that building and actively managing a CoP in which this emotional component is central requires a strong degree of safety and intimacy between members.

There is, however, a lack of research to define what members of CoPs perceive as "risk-free", and to establish a positive link between a risk-free environment within CoPs and the development and sharing of best practices. There has been no conclusive research on how to create such an environment within CoPs, nor on the key factors required for members to feel motivated to develop and share best practices across organizational units with one another.

By identifying 3 main determinants[37] attached to the "risk-free environment" dimension, this investigation has opened the path for further research. Further investigation should therefore focus on finding how these 3 main determinants could be best managed so that they strengthen the development and the sharing of best practices within the CoP.

The findings of this study show that a risk-free environment is effective in overcoming a major problem regarding the internal transfer of knowledge, which Szulanski (1996) calls "an arduous relationship" between the source (of the best practice) and the recipient (basically due to the receiver's lack of trust of the source in terms of the transferred knowledge's quality). A risk-free environment cultivates trusting relations

[37] 1) The CoP as a "buffer zone", 2) no hierarchy-related pressure, 3) "think outside the box" approach

between CoP members, and creates a climate in which they feel free of hierarchical pressures and free to express themselves about many topics. Since this sense of trust is what holds the CoP together (especially in the case of "social productive" CoPs), the arduous relationship found in an ordinary organizational setting is transcended in a CoP setting whose aim is to enable members from different units to develop informal relationships. Thanks to the risk-free environment, CoP members freely and openly share problems and insights.

Sponsorship

Past research has pointed out that sponsors' responsibility is to link a CoP's activity to an organization's strategic objectives, and to measure and evaluate a CoP's contributions to the business objectives (Spencer et al, 2003; Wenger, 2004). Research also suggests that it is not a sponsor's primary responsibility either to design CoPs, or to prescribe their activities or outcomes. Instead, his responsibility is to work with CoP leaders in order to provide CoPs with resources and coordination (Wenger/Snyder, 2000; Wenger, 2004). However, Wenger/Snyder (2000) add that the sponsor should take on a supervisory and control function by requiring CoP participants to complete one knowledge development project per year, such as documenting a best practice, in order to remain in the community. The authors, however, do not provide any further explanation on the procedures that should be undertaken, how this control should be pursued, and who should be the actors. The current author's investigation explored this issue in depth. His research finding "sponsor as a control agent" explains how the sponsor should involve the CoP leader in the control process, and how he should require the leader to provide him with a specified number of best practices developed within the CoP within specified time intervals. Furthermore, the finding specifies that the sponsor should only accept such best practices under the condition that they fulfill specific performance (or "innovative") criteria – which requires the sponsor to have some expertise in the CoP's field. There is potential for further empirical research in this regard to discover the best measures that sponsors could use to control such practices' quantity and quality (also linked to innovation of practices).

Authors also recommend having a governance structure for CoPs, regrouping leaders from different CoPs into the organization so that they can discuss common concerns, content issues, and ways to cultivate relations with the top management to obtain regular funding (McDermott, 1999; Spencer et al, 2003). As far as sponsors are concerned, Wenger (2004) claims they their role is to assess whether CoPs deliver value for the organization. However, past research has not yet suggested regrouping sponsors into committees so that they can obtain a complete overview of the value that the different CoPs generate for the organization. The current author's research finding - "Build governance committees" - explores this issue. It bridges the gap in the literature between sponsors and CoP leaders at governance structure level by presenting the advantages of grouping sponsors and CoP leaders into the same committee, so that sponsors can assess each CoP's activity through the leaders' knowledge of the field. The finding also presents the ways top management's funding is allocated according to this assessment of CoP activities. Presenting governance committees as a general CoP activity reporting session that assesses which CoPs are of strategically most important for the organization, diverges somewhat from Wenger's (2004) research. In Wenger's (2004) view, sponsorship doesn't involve reporting on relationships. According to him, it is more about the sponsor providing resources and legitimization without a well-defined counter proposal being presented by the CoPs, in other words, the sponsor voices their proposals to the top management, so that the latter can affect the way business is conducted. The author's research findings suggests that a governance committee offers a set of opportunities: an opportunity for inter-CoP sharing of best practices, an opportunity for each CoP to become increasingly visible to the top management, an opportunity to merge CoPs, and opportunities to benchmark activities across CoPs. Subsequently, the positive impact that each opportunity mentioned has on the development and sharing of best practices within CoPs is explained. There is, however, still a wide scope of research opportunities in the field of governance structures as applicable to CoPs. Future research may focus on finding measures to sustain their activity, or how a hierarchy can be built with which to regulate and formalize their activity.

Numerous authors emphasize the importance of the sponsor's social role as the CoPs' link to senior level management (Fontaine, 2001; Wenger et al, 2002). In past research, authors have often claimed that a sponsor's main role is to nurture their

CoPs and ensure top managements' recognition of them by revealing the CoPs' strategic importance for the organization (Spencer et al, 2003; Wenger, 2004). However, the literature does not specify the concrete means through which the sponsor should promote CoPs' benefits across the organization. In this regard, the author's finding "sponsor as a "multiplication agent"" provides explanations on the proactive approach that the sponsor should take by regularly presenting CoPs' quantifiable benefits to the different subsidiary companies' upper managements. It explains how this positively impacts more active development and sharing of best practices, since upper managements will subsequently encourage more employees to actively take part in CoPs. Fontaine (2001) and Breu/Hemingway (2002) claim that it is important for members to see their activity within the CoP being legitimized by top management.

Further research on this topic should aim at extracting practical guidelines for CoP sponsors that they can use when selling the CoP concept to their subsidiary companies' upper management.

Community results

McDermott (1999) claims that CoPs are loose-knit and driven by value, whereas formal teams are tightly integrated and driven by deliverables. According to Wenger and Snyder (2000) and McDermott (2004), if CoP members and top management don't feel they can extract any outcomes from the CoP's area of expertise, they won't fully commit themselves to the CoP's work. Vestal (2003) maintains that not showing any tangible CoP outcomes leads to sluggishness between the members. The author recommends considering the value that CoP participation has for an individual, as well as the value it has for departments if their employees participate in CoPs. Wenger (2004) argues that participation in the CoP has to "connect a strategic need to the daily work of community members", so that they will find relevance and personal value in participating. Breu and Hemingway (2002) claim that CoPs must make identifiable contributions for their members. The authors underline that "these benefits are tangible but are not generic", since they are contingent upon a community's focus and activities. For Wenger/Snyder (2000), most of the benefits of participating in CoPs are derived from improved knowledge sharing capabilities that occur between employees

who have a common professional focus and complementary expertise. This conforms to Argyris/Schön (1978) and Hedberg's (1981) definition of organizational learning as "new insights or knowledge". Edmundson (2001), McDermott (1999), and Peltoneu/Lämsä (2004) stress the learning opportunities associated with linking a constellation of different CoPs across the organization. Vestal (2003) claims that members still have difficulties with recognizing what the CoP holds for them, because of the complexity of measuring the monetary benefits generated by CoPs for the organization. Numerous authors admit there are difficulties in measuring the value that CoPs bring to the organization and to the CoP members, and recommend using non-traditional methods to assess that value (Edmundson, 2001; Fontaine, 2001; Breu/Hemingway, 2002; Vestal, 2003).

However, the value created by active CoPs is in line with Fiol/Lyles's (1985) interpretation of organizational learning, which harbors the view that "learning… comprises a change in states of knowledge". Active CoPs that create and enhance practices can be associated with Probst/Büchel's (1997) definition of organizational learning as "the process by which the organization's knowledge and value base changes, leading to improved problem-solving ability and capacity for action". The results of the present study reveal that learning is a continuous process that aims to substitute old knowledge with new knowledge, therefore suggesting that the organization constantly manipulates knowledge, which eventually leads to knowledge creation.

The results of this study also confirm that it is, as Gibbert/Krause (in Davenport/Probst, 2000) point out, difficult to assess what a "best" practice really is. The findings show that members of CoPs often find it difficult to distinguish between a "good idea", a "good practice", and a "proven best practice" – 3 terms defined by Jarrar/Zairi (2000) – and tend to use the generic term "best practice". CoPs' practitioners should be more rigorous when assessing the nature of the practices that they develop and share in their CoP. Indeed, the results of this study show that a number of CoPs still don't assess the quality of their practices according to the 1) quantifiable performance objectives that they achieve (goals), and 2) quantified performance measures that they achieve (metrics). In general, the findings are in line with Kwiecien/Wolford (2001), who claim that there really is no such thing as a "best" practice, but rather "proven" practices that are replicated and continuously improved. This investigation shows that best practice development achieved by CoPs is in line with the "knowledge

development block" of the model by Probst et al. (1999). As knowledge development, best practice development in CoPs is about generating new skills, new products, better ideas and more efficient processes, all of which "includes efforts aimed at producing capabilities which are not yet present within the organization, or which do not yet exist either inside or outside it" (Probst et al., 1999).

Finally, the current study has contributed to the debate in several ways. It has identified a main CoP outcome – divided into 3 sub-parts - that is valuable for members and for top management ("fulfilment of business goals", divided into "seize measurable performance", "illustrate results", and "reporting of achieved operational objectives"), as well as how this outcome motivates the members to actively participate in developing and sharing best practices between one another.

Appendices

Appendix 1: questionnaire addressed to CoP leaders

Defining the Current State of Success of Your Community of Practice

Many different things in organizations are called Communities of Practice. Some are active and some not yet really launched. We want to ask you to identify:

A) General characteristics of your Community of Practice

B) How your Community of Practice is Active

C) How you lead your Community of Practice

Please fill in the right-hand column of each criterion with the assessment of your community (strengths, weaknesses and opportunities). Then please send the document to Stefano Borzillo (borzillo@hec.unige.ch).

Please:

1) give the name of your Community of Practice:

2) your name:

A) General characteristics of your CoP

Please review the following criteria and identify, based on them if your group really is and should be a community of practice.

Definition

First, a community of practice is a group of people that shares information, insight, experience, and tools about a topic or domain. The domain could be a professional discipline, such as mechanical engineering, a skill, such as machine repair, a topic, such as IT, or a segment of a production process, such as the carriage assembly of a printer. There are three key elements of a community:

- It is organized around a domain
- Members know and relate to each other, and

- The community develops common (sometimes proven) practices

To be a community, your group should meet the following criteria:

A) 1. The domain is important to both the company and community members

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
The domain should focus on issues where leveraging or developing knowledge is clearly beneficial to the business. Sometimes this is driven by a problem, like improving quality in part of the production process. Sometimes it is driven by strategy. One technical consulting company developed global communities around key technical areas to insure their status as a technically cutting edge company. If the topic is not important to the organization, the community will be marginalized and have limited influence. But communities also need to focus on topics people feel personally passionate about. Since communities are voluntary, they need to draw on members' passionate interests to compete with other demands on their time. Domains that successfully bridge these elements are likely to inspire the kind of thought leadership and spirit of inquiry that is the hallmark of vibrant communities of practice.	

A) 2. The domain is narrow enough to address common interests; wide enough for new insights

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
Clearly this is a balance. If the domain is so wide that each member is only interested in a small portion of it, the community will not be able to hold members' interest. One company formed a community of operators around plant operations. But community members were really only able to talk about their particular part of the production	

process. So the community needed to narrow its scope to parts of the production process. On the other hand, if the topic is so narrow that the community soon runs out of interesting, fresh ideas and insights, community members will also lose interest. One way to balance these conflicting forces, particularly in a large community, is to break the overall topic down into subtopics or focus areas. Each subtopic can still be threaded to the overall topic so members can see what else is going on in the wider community, but keep there more day-to-day interaction with the community on the subtopic level.	

A) 3. Community members need each other (knowledge is distributed)

Explanation and examples	**Assessment of your community (strengths, weaknesses, opportunities)**
If you are a group of people whose only connection is that you seek information from, or contribute to, a common database, you are not a community. If you are a centralized help desk providing information to people, you are not a community. In communities of practice, members have different knowledge, insights, and practices. Learning from each other is what creates a bond between them.	

A) 4. The domain focuses on topics that cross organizational structures.

Explanation and examples	**Assessment of your community (strengths, weaknesses, opportunities)**
If your offices are all at the same end of the hall, you don't need to form a community of practice. If you need help, you can just ask the person next door. Communities of practice need to cross organizational or geographic lines.	

A) 5. Members share tacit knowledge and think together.

Explanation and examples	**Assessment of your community (strengths, weaknesses, opportunities)**
There is simply no need to build communities around information that can simply be published. Communities are excellent at sharing ideas, insights, and current practices or thinking together about emerging trends and technology. Don't build communities where simply publishing information will do.	

A) 6. Members have common work practices.

Explanation and examples	**Assessment of your community (strengths, weaknesses, opportunities)**
To be a community of practice you need more than just common interest. You need a topic where people can share ideas and insights about how they do their work. When members can use the community to get help from their peers on real everyday work problems, the chances are high that the community will become an important part of that person's work life.	

A) 7. Sponsorship: Management actively supports the community.

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
Communities of practice can survive with little or lukewarm management support, but unsupported communities are hard to sustain. Other projects and commitments too easily pull community members attention away. Your community should have a sponsor, a relatively senior manager, who is knowledgeable and well respected in the community's domain. Sponsorship is not a passive role. Sponsors should help set the overall direction of the community, take an active interest in making the community grow and thrive, promote the community , fund community activities, work with the community leader to review progress and provide an avenue of input to senior management.	

A) 8. There is energy among potential members for the community.

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
Perhaps it goes without saying, but members need to be interested, even enthusiastic, about participating in the community. Since communities rely on volunteer energy and time, without clear interest among the members, the community is doomed to failure.	

A) 9. There is a "risk-free" environment in the community.

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
In the community, people feel free to speak-up their ideas, without fearing any sanctions/pressure from other members if they make mistakes. This atmosphere of "psychological safety" for members should enable	

them to develop and share best practices (knowledge) in a smoother way.	

B) How is your Community of Practice Active?

If the domain is appropriate for building a community, you might ask yourself if your community is genuinely active. Some of the communities in organizations never really got launched or never became active enough to be functioning and now may need to be re-launched. Please review the following criteria to decide if your community of practice is active.

B) 1. A clear sense of purpose / clear objectives

Explanation and examples	**Assessment of your community (strengths, weaknesses, opportunities)**
Some communities set annual goals. A Chemistry community in a consulting company, for example, holds annual round robin discussions among the three community leaders. Through those discussions they assess how well they did in achieving their last years' goals and develop new ones for the current year. All of their goals, of course, revolve around improving the quality of chemistry in the organization. Many active communities of practice do not have specific goals, but still do have a clear sense of purpose. A community of machine operators and engineers at a computer manufacturer had a clear purpose to improve operations on their part of the production process. Of course, a core group of active members, not just the leader, needs to have that sense of purpose.	

B) 2. A critical mass of engaged core members

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
Getting a large percentage of members to actively participate is difficult throughout a community's life. Many members join to learn or stay in touch with a field they are only marginally interested in, and have neither time nor intention to participate. But active communities do have a core group of members who regularly attend meetings, contribute ideas and help other members. This core group typically emerges early in the life of the community and is fairly stable throughout. Over time members of this core group can get to know each other quite well and build enough trust in each other that they can not only easily share ideas, but also ask for help and share insights from projects or activities that didn't go so well.	

B) 3. Activities

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
Active communities are just that: active. They have active discussion forums in which members ask each other for help in solving everyday problems. They have regular teleconferences to develop proven practices or solve sticky problems. They typically have 2 to 3 face-to-face meetings or more a year. While some of these may involve a large number of community members, they often are meetings of small groups, focused on a particular topic within the community's domain.	

B) 4. Many connections between members

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
Active communities are a web of relationships. While members do connect in face-to-face meetings, in active communities members connect even more in one-on-one email, telephone calls to discuss practices at different sites or get help from each other in solving everyday problems. If your community is active, you should find many of these one-on-one connections.	

B) 5. A sense of accomplishment

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
Active communities have a clear sense that they are making progress in advancing their purpose. When they have goals, that progress is measured as progress toward the goal, just like a team. When they don't have a goal, progress is measured by advancing toward their overall purpose. For example, a community of lean manufacturing facilitators felt that they were collectively learning what makes a lean event really work. While this did not have a clear step by step progression, the community saw its results in progressively more effective lean events.	

B) 6. Develop common practices

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
Typically active communities desire to identify proven practices, develop common insights, or create common approaches. If your community is active you should be building a number of these common practices, distributing them to community members, getting feedback from those who have applied them.	

B) 7. Benchmarking

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
In active communities, members do Benchmarking of their Best practices. For example, in a multinational cement company 12 cement production processes were compared across 12 different plants around the world. After the community members compared and assessed	

the characteristics of each practice, a new "best practice" was developed. It delivered higher performance: higher speed, less costly, better quality. The result of Benchmarking can either be a new practice, or the enhancement of an existing practice.	

C) How do you Actively lead your Community of Practice?

If your group meets the criteria for being a community of practice and if your community is active, then you might ask yourself if you are actively leading it. Active, engaging, passionate leaders are key to both starting and sustaining communities. Throughout a community's life, active engaged leaders link members with each other and key players in the organization. Throughout several workshops with community leaders, we identified seven activities that community leaders do.

C) 1. Prioritize: Keep the community focused

Explanation and examples	**Assessment of your community (strengths, weaknesses, opportunities)**
Active community leaders help the community to focus on important, achievable and interesting tasks. This is one of the most important jobs of a community leader. Prioritizing helps the community build momentum, solving important problems, helping members meet their needs, and insures that the community contributes to the organization.	

C) 2. Make connections (Network)

Explanation and examples	**Assessment of your community (strengths, weaknesses, opportunities)**
The greatest mistake of new community leaders is to think that most of their activity should be organizing and facilitating meetings. But networking is actually the primary activity of	

effective community leaders. Networking involves calling and emailing core and active community members one-on-one, connecting people with problems or questions with people with solutions, identifying potential hot topics, and building trust.	

C) 3. Follow-up on help requests

Explanation and examples	**Assessment of your community (strengths, weaknesses, opportunities)**
One of the most important ways to build trust in the community is to make sure that requests for help are answered quickly and effectively by community members. Good community leaders regularly review the help requests – or requests for feedback or input – call or email the sender to find out if they got timely responses and got the answer they needed, and making sure that feedback gets to the people who helped. Since in active communities much of the interaction is through telephone or email, this follow-up needs to be done one-on-one.	

C) 4. Convince members to help lead

Explanation and examples	**Assessment of your community (strengths, weaknesses, opportunities)**
Effective community leaders don't do all the work. They get other members to lead a little by facilitating events, becoming a subject matter expert, leading a discussion on the discussion board, or mining part of the discussion board for gems.	

C) 5. Host events

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
Active communities have both face-to-face workshops and more informal meetings of small groups within the community, either face-to-face or over the telephone. Effective community leaders make sure that both workshops and smaller meetings meet the needs of community members.	

C) 6. Update the homepage

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
An updated home page with new, interesting, and relevant material is also a sign that the community is active. It draws members' interest, especially if the community leader sends notices about the updates to community members.	

C) 7. Collect stories about value

Explanation and examples	Assessment of your community (strengths, weaknesses, opportunities)
As communities mature, it typically becomes important that they demonstrate their value. Sometimes this value can be expressed numerically, sometimes not. A scientifically oriented community in a pharmaceutical company was able to retain a well-respected senior scientist. While the costs of recruiting could be calculated, the value of having someone of his stature on the staff could not. The most important part of success stories is to demonstrate how the community's activities contributed to the success.	

Appendix 2: Semi-structured Interview

The set of questions that were addressed to respondents (CoP-leaders) were the following:

1) I start with the first basic question: From the perspective of your CoP, what do you consider is a "best practice"?

2) How do you rate the importance of each one of the following factors for the success of your CoP (2 = “very important”; 1 = “fairly important”; 0 = “not important”): clear objectives, routinization of CoP activities, sponsorship, leadership, risk-free environment, CoP results.

Now, let us switch to questions that link your community of practice to the development and sharing Best Practices:

In your community of practice:

1) What is the impact of formulating clear objectives on the development and the sharing of best practices within your CoP?

2) What is the impact of getting support from a Sponsor on the development and sharing of best practices within your CoP?

3) What is the impact of the CoP leader (or coordinator) on the development and sharing of best practices within your CoP?

4) What is the impact of having "routinized activities" (ie: meetings, workshops, e-meetings, conference calls, etc.) on the development and sharing of best practices within your CoP? Does Benchmarking (internal/external (with other companies)) of practices occur during these regular activities?

5) What is the impact of demonstrating CoP tangible outcomes to 1) members and to 2) upper management on the development and sharing of best practices within your CoP?

(For instance, can you measure quantitatively the success of your CoP? ie: prove that thanks to the best practices your Community of Practice has developed and shared, costs have been reduced for your organization, and/or revenues have increased? (How innovative were these practices?)

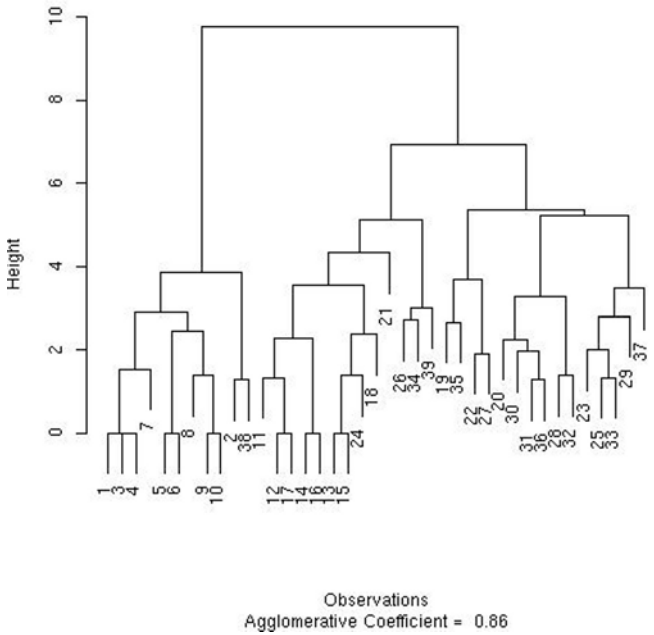
6) What is the impact of having a "risk-free environment" (when people feel free to speak up, give their opinion without fearing any sanctions from others) on the development and sharing of best practices within your CoP?

Appendix 3: matrix (39 x 6): ordinal data: 2 = very important; 1 = fairly important; 0 = not important

CoP number	Objectives	Leadership	Routinization	Sponsorship	Risk-free	Results
1	0	0	2	1	2	0
2	0	2	2	1	2	0
3	0	0	2	1	2	0
4	0	0	2	1	2	0
5	0	1	2	0	2	0
6	0	1	2	0	2	0
7	0	0	2	0	2	0
8	0	1	2	1	2	0
9	0	1	2	1	2	1
10	0	1	2	1	2	1
11	2	1	1	2	1	2
12	2	1	1	2	0	2
13	2	2	1	2	0	2
14	2	1	1	2	1	1
15	2	2	1	2	0	2
16	2	1	1	2	1	1
17	2	1	1	2	0	2
18	2	2	2	2	0	2
19	2	2	2	0	0	2
20	2	2	2	1	0	1
21	2	2	1	2	1	0
22	2	2	1	0	1	1
23	2	2	1	0	2	0
24	2	2	1	2	0	1
25	2	2	1	0	1	0
26	2	2	2	2	1	1
27	2	2	2	0	1	1
28	2	2	1	1	0	1
29	2	2	0	0	1	0
30	2	2	2	1	1	0
31	2	2	2	1	0	0
32	2	2	1	1	0	0
33	2	2	1	0	0	0
34	2	2	2	2	2	2

35	2	2	2	0	2	2
36	1	2	2	1	0	0
37	2	1	1	0	0	0
38	1	2	2	1	2	0
39	2	1	2	2	2	1

Appendix 4: Dendrogram: identification of 3 different groups of CoPs



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