Handbook of Research on Communities of Practice for Organizational Management and Networking:

Methodologies for Competitive Advantage

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Chapter 8
Communities of Practice:
Context Factors that Influence their Development

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ABSTRACT

Many organizations have developed Communities of Practice and they are one of the most important vehicles of knowledge management in the 21st century. Organizations use Communities of Practice for different purposes, but both, organizations and Communities, are limited by different context factors. Therefore, different goals are achieved with them: sometimes the intended goals and sometimes unintended goals. With this in mind, this chapter focuses on the context factors that influence the development of Communities of Practice. To this end, we review different cases of Communities of Practice within various organizations. Our analysis provides: (a) a reflection on the Context factors in the process of integrating Communities of Practice, (b) an analysis of the impact of these factors on the development of Communities of Practice in different organizations and (c) the conclusions of the study. This study is based on the general idea that Communities of Practice are a valid management tool for organizations. This chapter is therefore based on the study of Communities of Practice from the perspective of organizational management.

INTRODUCTION

Wenger et al (2002) define Communities of Practice as groups of people who share a concern, a set of problems or a passion about a topic, and who deepen their knowledge and expertise in the area by interacting on an ongoing basis. Communities of Practice are groups of people who share a concern or a passion for something they do, or who learn how to do it better as they

interact regularly (Kimble, Hildreth & Wright, 2000; Preece, 2004). This contributes to innovation and knowledge creation across an organization's boundaries, creating, a good process flow of knowledge, which is usually well linked with the organization's business strategy, in this way creating strategic benefits (du Plessis, 2008). In all cases, organizations are limited by their context factors and the changes they want to drive. So it is important for organizations to realize that they have choices to make when it comes to the cultivation of Communities of Practice and that they should use the formula that works best for their particular organization.

Identifying more limits to knowledge management, not only organizations are limited, Communities of Practice are too. From this point of view, an increasing number of studies in management literature have provided critiques of the Communities of Practice approach (Contu & Willmott, 2003; Fow, 2000; Handley et al. 2006; Marshall & Rollinson, 2004; Mutch, 2003). Roberts (2006) also argues that there are clearly unresolved issues and difficulties in the Communities of Practice approach. Issues concerning power, trust and predisposition such as Communities of Practice size and spatial reach involve challenges that have to be studied.

In this chapter, the authors approach Communities of Practice from an organizational point of view, including a study of Communities of Practice, which have considerable influence in organizational approaches. The authors of the present study have developed a cultivation model (E. Loyarte & O. River, 2007) in which Communities of Practice are clearly seen as a knowledge management tool which can be applied in certain cases within organizations. Although both Communities of Practice and organizations have their limitations, it now seems important to go one step further, and reach a stage where it is possible to analyze in a uniform way the different contexts in which Communities of Practice coexist and how they influence the groups they encompass, as well as the organization itself. With this in mind, the authors have focused on answering the following research questions:

- What kinds of businesses undertake the cultivation of Communities of Practice? What size are these businesses? Which sectors do they belong to?
- What objectives drive the cultivation of Communities of Practice within organizations?
- What kind of organizational environment is beneficial to the creation of Communities of Practice?
- Is organizational restructuring essential in order to promote Communities of Practice in organizations?
- What attitude should the members of a Community of Practice have in order to ensure its success?

In order to be able to answer these questions, we have analyzed the contextual factors which influence both Communities of Practices and organizations. The chapter is structured as follows. In the following section, we explain what a Community of Practice is not, the potential phases of its life cycle both within and outside of an organization, the different relationships it might have with its company, its limitations, the ways in which it can bring added value to an organization in helping to achieve competitive advantages, and the contextual factors that may influence it. We then go on to explain the methods behind this study, and present the selected case studies. The answers to the research questions set out in the current section of this work will then be detailed. Finally, the limitations of this study and the work to be carried out in the future will be set out.

BACKGROUND

This section focuses on reviewing, within a theoretical framework, the phases of the life cycle of Communities of Practice, as well as their relationship with their organization, their limitations, their potential for achieving competitive advantages for organizations, and the contextual factors that influence them. Therefore, this review suggests that, while organizations and Communities of Practice are limited in their implementation, Communities of Practice are nevertheless useful as a knowledge management tool.

Communities of Practice within Organizations: Stages of Development

It is important to understand the potential phases of the life cycle of a Community of Practice, since the contextual factors influence it in different ways depending on the phase which the Community of Practice finds itself in. For example, if the Community has just been set up and the process has been implemented from within the organization itself, the Community will be greatly dependent on the organization with regards to resources and the way in which the Community is directed by the organization. However, if a Community has been created spontaneously during the same phase of the life cycle, then it is possible that it will depend more on the group itself and its interest in moving forward with the process than on contextual factors within the organization. Similarly, a Community of Practice which has already consolidated its contextual factors will be influenced by these factors in a completely different way, due to the existence of a prior adaptation process (or not) within the organization and the members of the Community. In this section we will explain the phases of the life cycle of a Community of Practice according to the theories of authors such as Wenger (b. 1998), McDermott (2000), and P. Gongla, and C. R. Rizutto (2001).

According to Wenger, (1998 b) the lifecycle of a community of practice within a company is as follows: (See Figure 1.)

- **Potential stage:** People with similar work face similar situations daily without the benefit of shared practice for these situations. In such cases, people tend to look to their peers in order to discover common interests.
- **Coalescing stage:** Members meet and recognize each others' value, explore similarities in their work, define common practices and begin to develop a community.
- **Active stage:** Members engage in developing common practices, adapting to different circumstances, renewing interests, obligations, and relationships.
- **Dispersion stage:** Members no longer have a commitment to the community, but the community remains alive as an important centre of shared knowledge. As a result, members keep in touch and keep meeting sporadically.
- **Memorable stage:** The community is not the centre of relationships for its members, but they still remember it as a significant part of their identities. When members get together, they remember stories and, in turn, preserve memories of the time during which they belonged to the community.

McDermott (2000) also develops a lifecycle for Communities of Practice that coincides with Wenger's (1998b) lifecycle analysis, despite the fact that each stage is given a different name. According to McDermott (2000), communities evolve in the following stages: planning, start-up, growth, sustain renew and close.

However, the community of practice lifecycles developed by Wenger (1998b) and Mc Dermott (2000) are not the only ones in existence. In 1995, IBM Global Services began to implement a knowledge management model that included the

Figure 1. Stages of development. Wenger (1998 b)

Stages of Development

Potential:

People face similar situations without the benefit of a shared experience

Coalescending:

Members come together and recognize their potential

Active:

Members engage in developing a practice

Dispersed:

Members no longer engage very intensely, but the community is still alive as a force and a center of knowledge

Memorable:

The community is no longer central, but people still remember it as a significant part of their identities

Finding each other, discovering commonalities

Exploring connectedness, defining joint enterprise, negotiating community

Engaging in joint activities, creating artifacts, adapting to changing circumstances, renewing interest, commitment, and relationships

Staying in touch, communicating, holding reunions, calling for advice

Telling stories, preserving artifacts, collecting memorabilia

Time

development of Communities of Practice. Experience with this implementation process during more than five years means that IBM has a model for the evolution of Communities of Practice after having monitored more than 60 communities. The stages of evolution that IBM proposes are related to those developed by Wenger (1998b) and McDermott (2000) and are as follows:

- **Potential stage:** At this stage, the community is starting to form and its members are beginning to contact each other.
- **Building stage:** The community starts to be defined and forms its operational principles. The community's main group begins to develop the community's core and its memory of activities.
- **Engaged stage:** The community begins to use processes and to improve them, always pursuing the members' common objectives and goals. The interaction between

members and permanent learning are fundamental in this stage. At this point, the community evolves in its abilities of developing tacit and explicit knowledge.

- **Active stage:** The community begins to obtain benefits and to show them, as well as to create value for the members and the organization. This value and benefit is derived from knowledge management and from the members' joint work. At this point, collaboration is fundamental.
- **Adaptive stage:** Both the community and the organization use knowledge in order to generate competitive advantages. At this point, the community innovates and generates new knowledge, creating significant changes and benefits in the organizational environment.

As of now, and after analysis and study, IBM has extensive experience with Communities of

Table 1. Different stages of development for communities of practices

AUTHOR	PHASES	DIFFERENCES	SIMILARITIES
Wenger (1998)	Potential, coalescending, active, dispersed, memorable	Wenger's approach can be applied to Communities that may be within an organization or not.	All the approaches have a first phase which involves the potential cultivation of Communities as well as some final phases involving the closure or dispersion of the groups.
McDermott (2000)	Planning, start-up, growth, sustain/renew, close	McDermott considers the final phase of a Community to be the closing phase, while other approaches consider what will happen to a Community beyond its closure.	
IBM (1995)	Potential, building, engaged, active and adaptative stages	This approach is aimed at the phases of the life cycle of Communities within an organization.	

Practice in the first three stages. However, there are few examples of communities that have reached the active stage, and even fewer of communities reaching the adaptive stage. What IBM has noticed, however, is the fact that there are communities that, although not quite in the adaptive stage, have some of the characteristics of this stage. So they are communities that combine some aspects from this stage and others from the last stage (Gongla & Rizzuto, 2001).

In short the different life-phases of Communities of Practices can be summarized as stated on Table 1.

Each Community of Practice will have its own particular phases within its life span, but given that Communities are also groups of people, the approaches previously set out give us an idea of how they can create and evolve, the cultivation of these groups being of primary importance in order for them not to enter into the closing phases. Wenger's approach is the one that most closely mimics the way that human beings act, and explains very well how a Community of Practice can enter into the dispersion phase if sufficient motivation and the commitment to continue moving forward are not maintained. McDermott and IBM discuss the phases of the life cycle of Communities within an organization, which is helpful when, having determined which phase a Community is in, deciding whether to intervene in them or not.

In the study developed by the authors in this chapter, the contextual factors are analyzed in Communities of Practice which have already run their course within an organization. Since the success or failure of these Communities is already known, it is possible to analyze their trajectory and the influence (positive or negative) these factors have had on the organization and the group itself.

Types of Relationships between Communities of Practice and Organizations

In this section we will explain the relationship which a Community might have with an organization, taking into account the fact that a Community can be linked to a department or business unit, an interest group which combines more than one business unit, or even a group from outside the organization itself. It is clear that contextual factors differ depending on the case in hand.

As has been explained previously, being a member of a Community of Practice is not a

question of rank but rather of voluntary participation. Because of this, communities can cross the hierarchical and institutional levels of organizations. It is possible to find communities such as the following:

- **Within business units:** They solve problems that emerge within the units themselves.
- **Beyond business units:** The knowledge of communities is normally distributed across different units. In such cases communities can develop strategic perspectives that transcend product line fragmentation. For example, the Community of Practice could suggest an investment plan which no single business unit would be able to produce due to lack of knowledge.
- **Beyond the organization's limits:** In certain cases, Communities of Practice can be useful for working beyond the limits of the organization. For example, in industries in which change is a key factor in the market, engineers who work together with clients and suppliers could form a Community of Practice for the technological monitoring of company laboratories' updated maintenance, taking into consideration the market's technological changes.

In addition to the above, the relationship between different Communities of Practice and organizations can vary substantially, as seen in Table 2.

In this study we analyze the contextual factors that influence Communities of Practice within an organization and attempt to ascertain what gives rise to the relationship which is established between the organization and the members of the Community.

The Drawbacks of Communities of Practice

If the evidence suggests that the contextual factors influence Communities and organizations, then it follows that both have their limitations. Therefore, in this section we will also examine the limitations of the various kinds of Communities that exist.

Communities of practice, just as every other human institution, also have their drawbacks: They can hoard knowledge, limit innovation, close off new members and experiences, reflect society's injustices and prejudices, etc. Therefore, it is not a good idea to idealize communities of practice or to expect for them to solve every problem without creating any of their own. In fact, since communities are normally involved in organizations, they are usually part of the problems that they normally have to solve. This section examines the disadvantages of communities of practice, taking

Table 2. Original table based on "Relationships to Official Organization". Wenger (1998 b)

Type of Relationship	Definition	Challenges in the Relationship
Unnoticed	Invisible to the organization, and sometimes even to the members themselves	Reflection, awareness of value and of the Community's limits
Invisible	Only informally visible to a circle of people	Obtaining resources and impact in order to not remain hidden.
Legitimate	Officially recognized as a valuable entity	Not monitoring or managing the community too much, and trying to fulfil work demands.
Strategic	Recognized as a priority asset for the achievement of organizational success	Pressure, exclusion, elitism.
Transformational	With the capability of redefining its environment and the direction of its organization	Management of organizational limits and acceptance.

into account three different levels: Individual communities of practice, constellations of communities (relationship between a group of communities), and organizations. Seen from this perspective, the weaknesses featured by communities of practice are as follows.

Individual Communities: Weaknesses

The two most general problems in a community are:

- The first problem is fairly obvious, since it consists of the fact that the community may not work correctly. There are various possible reasons for this: Their design is not focused on their evolution, there is no dialog, they don't invite different dialog levels, private and public spaces for discussion are not developed, they're not focused on creating value, there is no familiarity, there is no rhythm of work, they fail in reaching the different stages of a community's life cycle, the domain does not motivate the community's members, members do not get along well enough to develop the necessary trust for working, etc.
- The second problem is more subtle. It reflects the human weaknesses of each member and, as a result, the community's weaknesses are inherent to the group. Communities are made up of people, and although people might work well, problems arise even when the community is functioning correctly, since there could be implicit problems that could entail the development of serious disarray within the group. A community is an ideal structure for arresting people's learning when members do not get along. There could be jealousy, imperialism, narcissism, ostracism, dependencies, stratifications (too much distance between the core group and the

rest of the group), lack of connection between people, localism, etc.

A lot of these weaknesses are not fatal, and communities can even live with this type of problems and achieve great results. A large number of successful communities recognize their weaknesses and are able to reaffirm themselves in their vitality.

Constellation of Communities: Weaknesses

In order to study the effectiveness of a community, it is not only necessary to observe its internal development, but also its relationships with other communities and bodies. There are, however, problems associated with constellations of communities. Maintaining trust between members of several communities is more complex that maintaining it within a specific community. In fact, different communities mean different languages, practices, styles, vocabulary, etc. The limits of each practice are often informal and are not normally addresses, but this does not mean that they do not exist.

The limits of practices entail two challenges for communities:

- **Protection:** Communities develop knowledge efficiently by creating their own jargon, methods, and surroundings. This helps members learn and invent more easily, but limits for people who do not belong to the community are inevitably created, and, as a result, there can be misunderstandings and lack of communication between communities and transferring knowledge from one community to another can be a challenge that is difficult to overcome. Differences between different communities are difficult to overcome, and, as a result, every community tries to protect its knowledge implicitly.

- **Filtering:** The limits of practices do not correspond to organizational limits. Therefore, there are communities that cross these limits, and knowledge is filtered towards areas outside of the organization in an easier manner than towards areas inside, since communities can get to the point where they share practices with communities from other organizations. This mechanism can result in the effective and efficient development of channels of distribution for information and ideas.

Communities protect and filter knowledge simultaneously. It is not easy for knowledge to filter through the limits of a practice within an organization, but it does flow easily within the same practice and without taking into account the existence of other types of limits. It is not possible to avoid these types of risks, and, as a result, it is necessary to coexist with and manage them. The key is in paying enough attention to limits in order to avoid any possible problems and to pursue the advantages and opportunities that could emerge.

Organizations: Weaknesses

Communities of practice normally develop within an organizational context. This section has explained how a community of practice can hinder organizational learning when its problems distract people from their productive activities or their organizational limits. On the other hand, organizations can hinder the development of a community in exactly the same way. The organization can be irrational and counterproductive, and internal conflict could proliferate. There are two types of problems at an organizational level: The first one deals with the organizational dysfunction that communities may suffer, and the second with the structural rigidity or complexity of the organization in question.

Communities, just like other types of organizational initiatives, can run into corporate barriers that will affect their ability to transfer knowledge. These barriers could be: Irrational policies, short-term focus on tangible results (these do not allow long-term strategic priorities), and anti-learning organizational cultures.

Communities are usually unable to develop mechanisms that counteract organizational disturbances, since they require a commitment on behalf of the company that manages organizational policies and the corporate system's priorities. However, in order for a community to prosper, the process must be kept in line and promoted so that a knowledge system that allows for the creation of added value to the organization can be built. In this case, the community will overcome the company's rigidity and complexity, and will be able to become an agile tool for sharing knowledge. Conscious of the risk that the creation of a community can entail, the objective is to create a productive relationship between the organization and the community that will allow sharing necessary knowledge and that will allow the members of a community to learn.

This study focuses on the limitations of Communities of Practice within organizations as well as the limitations that may exist by having certain members in the group (limitations of the Community itself).

The Validity of Communities in the Improvement of Competitiveness

Even taking these limits into account, and paying due attention to contextual factors, this chapter nevertheless aims to demonstrate that Communities of Practice are valid management tools for organizations. This theory has also been explored in the writings of other authors, as can be seen from the text that follows.

The growing interest in organizational learning during the nineties implicitly promoted the significance of groups and informal networks, both recognized as important opportunities for organizations. Along the same lines, Lave and

Wenger (1991) state that communities of practice should be recognized as valuable assets within organizations.

Recognizing the fact that communities of practice affect the company's activity is important, since this is how the traditional hierarchical barriers of organizations themselves are overcome. However, communities also seem effective when it comes to solving unstructured problems and sharing knowledge beyond organizational limits. Moreover, the concept of communities is recognized in respect to their significance in developing and maintaining the organization's memory in the long term (Lave & Wenger, 1991).

All these opportunities are important, although not always recognized, in complementing the value that members of communities obtain when enriching their own learning with the increase in motivation to share what they know (Lesser & Storck, 2001).[1]

Empirical studies show that communities of practice benefit organizations, the communities themselves, and their members, since they are powerful driving forces when it comes to sharing knowledge and obtaining business benefits (Saint-Onge & Wallace, 2003). The competitive advantages gathered from said studies are as follows (Allee, 2000):

- For the organization:
  ◦ Helps drive the business strategy.
  ◦ Helps solve problems by joining the community's opinions with those of the organization
  ◦ Helps develop, retain, and acquire knowledge talents and employees
  ◦ Develops key abilities and knowledge competencies.
  ◦ Quickly spreads the operation and practice excellence of the organization.
  ◦ Generates ideas and increases opportunities of innovation.

- For the community:
  ◦ Helps develop a common language, methods, and models around specific competencies.
  ◦ Extends knowledge and know-how to diverse people.
  ◦ Helps retain knowledge when there are workers leaving the company.
  ◦ Increases access to knowledge throughout the company.
  ◦ Provides the significance of sharing power and influence with the organization's formal part.
- For the person:
  ◦ Helps people carry out their work.
  ◦ Provides a stable sense of community with other people in the organization and with the company.
  ◦ Promotes a sense of identity based on learning.
  ◦ Helps develop individual abilities and competencies.
  ◦ Provides people with personal challenges and opportunities.

According to Lee (2003), the benefits of an organization in having communities of practice include a fast response to clients, cost savings, improvement in work quality, the quick implementation of projects, and the ability of solving problems with knowledge that has been developed previously. Communities also provide the organization with the key to making tacit knowledge explicit, since tacit knowledge is extremely personal and difficult to transfer as is and to quantify. This type of knowledge, as previously mentioned, is essential and difficult to capture, since it is not normally documented.

Members of communities are also benefited, since they can become members of communities as soon as they enter the organization. This allows them to access knowledge that they could need to orient themselves in their new job. Seen from

this point of view, communities of practice are particularly effective for members spread across different geographical environments, since the community provides them with a way to have constant access to information and knowledge that they could require at any moment.

Organizations that support communities of practice have the advantage that knowledge flows from the person to the organization without the need for impositions derived from hierarchical reasons, and rather as a result of their personal motivation, which leads the person to keep sharing knowledge constantly, naturally, and non-specifically (Ledtka, 1999).

Research by Lesser and Stork (2001) reinforces the statement regarding the competitive advantages derived from communities of practice, and, along these lines, detects the fact that these groups have an influence on the results of organizations in the following aspects:

- Decreasing the learning curve for people who have just entered the company, since members of communities take in new practitioners and share their tacit knowledge with them, helping them to communicate with the organization and trying to make the technical and cultural aspects of their current responsibilities easier for them.
- Responding quicker to clients' needs and requests, since communities can help identify the ideal person for solving the client's specific problem. Communities of practice integrate a perspective of connection between people, which can be very important, particularly in organizations in which specialized people are geographically scattered.
- Preventing both double work and "reinventing the wheel." This is one of the contributions that organizations value most highly, since members of communities develop the ability of capturing and reus-

ing knowledge previously generated and using it in applicable cases. This way, retention in organizational memory becomes an important fact that conveys the security of proposed solutions to new problems being effective, since they have already been tried and tested in previous cases.

- Producing new ideas for products or services. A lot of the communities analyzed in the study by Lesser and Store (2001) have been creators of innovation, since their members share diverse perspectives on specific and common subjects within an environment of communication that is comfortable for sharing challenges and developing proposals.

These same conclusions are also backed up, on one hand, by authors such as Bukowitz and William (1999),[2] who maintain that communities generate abilities in organizations that make these organizations competitive, and, on the other, by research directed by the IBM Institute for Knowledge Management, Lotus Research, and the Boston University, which also highlights these benefits from communities of practice in organizations from various industrial sectors that were part of the analysis (Lesser & Everest, 2001). In turn, authors Wenger and Snyder (2000) state that communities of practice create value in organizations under the aforementioned terms and aspects and that they constitute a new horizon for companies, with the expectation that, in ten years, communities will be part of common conversations much like discussions about business units and work teams are today, as long as businessmen learn to understand communities as an important part of achieving organizational success. McDermott (2002) also states that the impact that communities of practice have on organizations can be measured through changes detected in activities, income, value created at an individual and organizational level, and in organizational results.

Factors which Influence Communities of Practice

In this section the authors try to identify factors from the theory of Communities of Practice in order to emphasize their importance during the process of Communities of Practice development, along with strategies that can be adopted for integrating communities into organizations.

The factors used to analyze the experiences are the following:

Size of Communities and Sector of Activity: Size of the Communities

Communities of Practice were originally presented as organic, spontaneous, self-organized groups (Lave & Wenger, 1991). However, Wenger (2000) and other authors (Saint-Onge & Wallace, 2003; Wenger et al, 2002) suggest that Communities of Practice are susceptible to manipulation on the part of organizations, and that they are influenced by their organizational context. Communities of Practice exist in both small and multinational organizations, and so we can find Communities comprising anything from a few members to thousands of them. Therefore, the question is raised whether the same principles can be applied to very small Communities and very large ones, as well as Communities that coexist in multinational companies or small businesses (Roberts, 2006).

Another factor which influences the context of Communities of Practice in organizations is the sector within which the business in question carries out its activity, since this affects the objectives to be covered with the cultivation of the Communities, and the organization's attitude towards the group.

In this study the authors focus on the analysis of the kind of organization linked to the Communities in hand, as well as the sector of activity, since the study is written from an organizational point of view, as opposed to being more focused on the Community's perspective. However, both factors – organization size and sector – have an influence on Communities of Practice.

Objectives which Prompt Organizations to Cultivate Communities of Practice

Communities of Practice are cultivated in order to achieve various goals: to communicate good practices, to solve problems in the most efficient way possible, to develop professional skills, to influence organizational strategy, retain talent, etc. (Burk, 2000; Tamizi et al. 2006).

The loss of knowledge deserves special attention, since it is a serious problem for organizations. Businesses are always fighting the loss of people which results in a loss of the tacit knowledge that encompasses corporate knowledge. In order to address this problem, organizations search for ways to convert tacit knowledge into explicit knowledge (du Plessis, 2008) or ensure that people who are about to retire train new personnel so that corporate knowledge remains within the organization.

This retention of knowledge, in turn, is also more likely to help keep talent in the organization, as members of staff will have an innovative knowledge base to work from, which will create a stimulating working environment (Wenger et al. 2002).

One organizational objective may be to build social capital by building up relationships and values such as trust and integrity. This will allow the building of values such as trust, honesty, integrity and transparency (du Plessis, 2008).

All organizations have strategic drivers of Communities of Practice. In the du Plessis study of 2008, the strategic drivers in small and medium enterprises (SME) are the following:

- Adopting to the rapid pace of change in the business world;
- Using Communities of Practice as a communication tool;
- Communities of Practice can achieve shared organizational objectives;

- Communities of Practice can assist in managing the knowledge management lifecycle;
- Communities of Practice can break down organizational silo behaviour;
- Communities of Practice create a knowledge structure for the organization;
- Communities of Practice can ensure collaboration across geographical boundaries;
- Using Communities of Practice as vehicle to combat knowledge attrition;
- Creation of social networks;
- Using Communities of Practice as learning entities;
- Communities of Practice as incubators for the stimulation of innovation;
- The more change in the environment, the more connectivity is required by organizations with the key marketplaces.

Therefore, the goals for developing Communities of Practice are highly heterogeneous and depend on multiple characteristics (size, sector, employees, necessities, etc) which have to be considered in a cultivation process and, of course, when studying different experiences.

There are different motivations for developing Communities of Practice and the potential results depend on the factors explained above.

Context Factors

- Organizational environment: Communities of Practice require an organizational environment which will foster their cultivation, with an organizational culture in line with their characteristics. Moreover, this environment must be in tune with the environment of the groups themselves so that both the organization and the Communities can provide one another with mutual assistance. In the experiences studied we focused on the need for a particular environment (Wenger et. Al 2002), which is the

need for conditions or a communication infrastructure between potential community members (Brown & Durguid, 2001) highlighted that Communities of Practice require a supportive management approach (Swan et al. 2002) and that Communities of Practice should engage with their wider epistemic context (Thomson, 2005). Technical, historical and cultural context is also significant, and the desire to develop Communities of Practice should be taken into account, along with the potential impact of successfully engendering Communities of Practice. Successfully founding Communities of Practice might have the potential to fundamentally reshape an organization (Venters & Wood, 2007).

- The need for restructuring as a key element of Communities of Practice: Venters and Wood's 2007 study suggests that success in founding Communities of Practice has the potential to fundamentally reshape an organization. It is obvious that if an organization starts the process for founding Communities of Practice it is because it needs to reshape a process, a group, a department or something in the area of Knowledge Management. However, it is not enough with the need to reshape, having resources enough to start the process is a key factor. In other words, being able to reshape.
- Epistemic context: The concept of Community of Practice developed by Wenger (1998) is part of the social learning theory, which is based on the following premises:
- We are social beings - which is considered an essential aspect of learning.
- Knowledge is a matter of competence in respect to certain valued practices, such as singing in tune, discovering scientific

facts, fixing machines, writing poetry, being convivial, growing up, etc.

- Knowing is a matter of participating in the achievement of these practices, engaging oneself actively in the world.
- Meaning is what learning must ultimately produce.

The main core of interest of this theory, which is based on the assumptions quoted above, rests on learning as social participation. Participation within this context does not refer to mere engagement, but rather to a process of greater reach that consists of actively participating in the practices of social communities and of building identities within them.

In describing the practical side of Communities of Practice, Wenger (1998) draws on theories from several publications which are summarized in Table 3. This table shows epistemic characteristics of Communities of Practice to the extent they concern the way we think, experience and learn (all of which occurs as part as of our participation in social activity).

- Theories of social structure give priority to institutions, norms, and rules. They emphasize cultural systems, discourses, and history. They look for underlying explanatory structures that clarify social guidelines, and tend to view action as a mere realization of these structures under specific circumstances
- Theories of situated experience give priority to the dynamics of everyday existence, improvisation, and coordination. They basically deal with people's interactive relationships with their surroundings.
- Theories of social practice deal with the production and reproduction of specific ways of participating in the world. They are concerned with everyday activity and real-life scenarios, but with an emphasis on social systems of shared resources by

means of which groups organize and coordinate their activities, their mutual relationships, and their interpretations of the world.

- Theories of identity address the person's social formation, the cultural interpretation of the body, and the creation and use of markers of affiliation such as rites of passage and social categories.

Once again, learning is located in the middle. It is the vehicle for the evolution of practices and for the inclusion of participants in them, as well as the vehicle for the development of identities and their transformation at the same time.

In claiming the existence of Communities of Practice, one is the adopting a definable epistemological position in which it is theoretically possible for a group of interacting people to achieve a unique virtuous circle of increased participation, identification, learning, prominence

Table 3. Epistemic characteristics of communities of practice (Thompson, 2005)

Body of Theory	Communities of Practice Characteristics
Theories of Learning	Participation in Communities of Practice involves communication, is task oriented, requires at least peripheral social inclusion, is distributed and arises from dialectics between subjective and objective realities.
Theories of Social Formation	Situated learning exists only in interaction between structural forms and human action, not in either of these alone.
Theories of Practice	Communities of Practice are a living social situation.
Theories of Identity	Situated learning is negotiated experience, of which identity is both input and output – a connection between different communities, styles and procedures.
Theories of Situation	Situated learning is always context specific, and is affected by the interpreter's curriculum and narration.

within the group and motivation (based around certain structural styles and procedures).

ANALYZING MANAGEMENT-PROMOTED COMMUNITIES OF PRACTICE

This section explains the research methods and the selection of the cases analyzed.

Case Study Methodology

In order to reach the conclusions proposed in the following text, the authors carry out an analysis of case studies where selection of the same follows the following criteria:

- The experiences should be well documented, and explain the results of the cultivation of Communities of Practice within an organization.
- The study should be based on organizations of different types, sizes, and sectors.
- The study should explain the relationship between Communities of Practice and organizations, as well as the organizational environment in which it is found.
- Cases should be selected which allow us to know the characteristics of each Community of Practice, its environment, and the way it functions.
- Each new experience should enrich the study, and therefore no two similar experiences should be used.
- The unit of analysis should be the Community of Practice itself as a management tool in an organizational environment.
- All experiences must be analyzed using a single theoretical model.

These criteria will allow us to conduct different analyses on real and relevant experiences related to the cultivation of Communities in organiza-

tions, allowing us to compare them and reach conclusions that will aid the launching of new experiences based on Communities of Practice.

The sources used to identify experiences are the following:

- Scientific articles
- Books
- Publications issued by the organizations themselves
- The organizations' websites

All the Communities of Practice examined in this study are linked to organizations, allowing us to compare these groups within a specific context.

Case Selection

Table 4 shows the companies that were studied and some of their basic features, such as their respective profiles, the country and the size of the company, and the references of the documented experiences. It must be mentioned here that the selection of cases has not been an easy task, mainly because the authors have had to define for this purpose the conditions that distinguish a Communities of Practice from just a group or a network, as we mentioned in the background.

RESULTS AND DISCUSSION

In this section the conclusions reached from the study which answer the research questions posed in the introduction to this chapter are presented. The analysis and conclusions obtained are described below:

1. What kind of businesses undertakes the cultivation of Communities of Practice? What size are these businesses? Which sectors do these businesses belong to?

As can be seen from Table 3, the majority of the organizations studied are large, and we only have three case studies involving small businesses. Therefore, from this study we can conclude that it is large companies which require new manage-ment tools which can provide them with a new competitive advantage within their sector. In any case, it is still necessary to take into account that this case study is based on published experiences, and it is likely that there are many more cases of

Table 4. Main features of the experiences analyzed

ORGANIZATION	SECTOR	COUNTRY	SIZE	CASE PUBLISHED BY
IBM Global Services	Telecommunication	USA	Large	Gongla, P. & Rizutto. C. R. (2001)
World Bank	Bank	USA	Large	American Productivity and Quality Centre (2000)
Andersen Consulting Education	Consultancy	USA	Large	Graham, W. & Osgood, D. (1998)
Cap Gemini Ernest & Young	Consultancy	France	Large	American Productivity and Quality Centre (2000)
DaimlerChrysler	Automotion	Germany	Large	American Productivity and Quality Centre (2000)
Ford Motor Company	Automotion	USA	Large	American Productivity and Quality Centre (2000)
Schumberger	Technological Services	USA	Large	American Productivity and Quality Centre (2000)
Xerox Corporation	Technology and Services	USA	Large	American Productivity and Quality Centre (2000)
Watson Wyatt	International consultancy	England	Large	Hildreth, P. & Kimble, C. (2000)
International company	Distributor/Commercial company	England	Small	Hildreth, P. & Kimble, C. (2000)
Defence Department	Civil Sevice	USA	Large	Defense Department of USA (2004)
Medico	Bioscience	UK	Large	Swan, J. A.; Scarbrough, H. y Robertson, M. (2002)
University of Indiana	Education	USA	Large	Liedtka, J. (1999)
Basque Company	Automotion	Basque Country	Small	Calzada, I. (2004)
British Council	Education & culture	UK	Large	Venters, W & Wood, B. (2007)
E-Future	Information Technologies	UK	Small	Thompson, M. (2005)
Anglia Rusking University	Education	UK	Large	Wisker, G. et al. (2007)
Public House Managers	Licensed retail sector	UK	Large	Mutch, A. (2003)

small businesses which have created Communities of Practices without recording their experiences. The large organizations, often market-driving organizations in their sector, publish the results of their good practices, while small and medium sized businesses, even if they are immersed in the culture of knowledge management, are not used to publishing the management tools they use to carry out their business strategy. This is reflected in the study presented in this chapter.

The predominant sectors are consultancy and education, along with the motor industry and technology. The consultancy and education sectors (business schools) were the first to investigate and work with new management tools, since these sectors need to be up to date at all times in order to be able to train managers or students in this discipline. This knowhow allows them to be at the forefront of various aspects of their sectors, ensuring that they are able to take advantage of the opportunities afforded by the fact that they are adequately prepared to implement these tools in their own organizations. In fact, the earliest cases of the cultivation of Communities of Practice come from the consultancy and education sectors.

The motor industry is subject to such high competitive pressure that it requires a high level of efficiency and efficacy when launching a new product and this implies important organizational changes. In fact, we have even found a small business which has involved itself in the world of Communities of Practice in order to survive in the motor industry in the Basque Country.

Companies in the technology sector are characterized by intensive knowledge. They require this kind of tool in order not to duplicate processes and to allow them to create synergies in organizational learning for the professionals that make up the companies.

As set out by Roberts (2006), the characteristics of Communities of Practice which are cultivated in small or large companies are completely different: for example, it is impossible for small companies to create a Community of Practice comprising

1,500 members, and they are limited with regard to the resources available to them. Likewise, the sector in which an organization works also has an effect on its limitations and opportunities. Both factors create limits for organizations, their Communities of Practice, and the opportunities available to them. In this study we have already pointed out that the motor industry is affected by certain factors which pressure motor companies to change their management tools, although results differ for large and small companies. Nevertheless, in other sectors the pressure is not so great, and therefore the companies in those sectors work in a different way.

2. What objectives are used to promote the cultivation of Communities of Practice within organizations?

Objectives differ according to the business and the sector. In this study, the most common objectives are the following:

- Convert the business into a flexible working unit with heterogeneous staff who share their tacit knowledge. The idea is that a business should have the capacity to react to unstable market conditions (Automotion, SME).
- Unite knowledge management and business strategy in order to create a system that adds value and brings with it a competitive advantage by means of an improvement in organization thanks to knowledge sharing (IBM Global Services, Andersen Consulting Education, Cap Gemini Ernest & Young, Schumberger).
- Promote global knowledge within and outside the organization in order to be more effective, using Communities of Practice which allow for discussion forums (World Bank, Indiana University, Ford Motor Company, Public House Managers).

- To ensure that corporate knowledge remains within the organization even though experts retire, maintaining basic organization competences (Defense Department, Daimler Chrysler).
- Promote innovation within the company in order to improve results (Xerox Corporation, Medico, Efuture).
- Test the validity of Communities of Practice in distributed environments (Watson Wyatt, Important International Company, Anglia Ruskin University).

It is clear that the objectives specified for the cultivation of Communities of Practice are various, but the common denominator is their use as a management tool, with the final objective of reducing costs or obtaining a competitive advantage in a particular sector.

One of the characteristics of Communities of Practice which differentiates them from other management tools is that they can be used to retain tacit knowledge within an organization although those who possess the knowledge leave the organization: Communities, therefore, are a valid tool for maintaining corporate knowledge. In this case, success depends on the attitude of the members that comprise the Communities of Practice and their willingness to share their knowledge, as well as the business culture of the company itself and its attitude towards Knowledge Management and Organizational Learning.

3. What kind of organizational environment is beneficial to the creation of Communities of Practice?

According to the case studies, the idea to cultivate Communities of Practice can come from employees or the organization itself. In both cases, there has to be an organizational culture which is able to support change, and which can also depend on the flexibility of its employees in order for these changes to be carried out. In many successful cases it is clear that the organizations involved are capable of providing the necessary resources – both human and material – to cultivate Communities of Practice.

An environment in which the employees have the initiative to create these groups and the organization supplies the technology and other means to support their efforts is an environment which will allow the process to bear fruit (Andersen Consulting Education, Ford Motor Company, Schumberger, Xerox Company).

There are also organizations which, while they do not have employees who provide the initiative, they do have the culture, strength, and sufficient resources to carry out an organizational change of these characteristics where the staff is kept motivated in the Communities of Practices that have been created (World Bank, IBM Global Services, Defense Department, Indiana University, Cap Gemini Ernest & Young, Daimler Chrysler, Watson Wyatt, Anglia Ruskin University, Public House Managers, Efuture).

Nevertheless, this environment will deteriorate if the objective is not only to share knowledge but also to get rid of a hierarchical status which existed before the change was embarked upon (Medico) and the organizational environment is deteriorated by the members of the Communities of Practice themselves. That is to say, that the change in employees' perceptions of the company affect the organizational environment and its culture. Therefore, when a process of cultivation of a Community of Practice is undertaken, it is necessary to assess the organizational changes that this new route will entail, since the people that comprise this organization might not be prepared to assume and absorb this change (although this change might be necessary for the organization).

Of course, in cases where there is no organizational culture which might take knowledge management into account, or willingness on the part of the members to change any aspect of their work or the organization, the mission to cultivate

Communities of Practice becomes impossible to fulfil (British Council).

4. Is organizational restructuring essential in order to promote Communities of Practice in organizations?

In cases in which the creation of Communities of Practice is organic, there is no need for organizational restructuring; at least, if there is, employees are not aware of it. Sometimes the company supports these initiatives because they understand that the gestation of these groups can be beneficial to the organizational learning that might subsequently lead to restructuring. However, in these cases Communities of Practice are not proposed as a tool for restructuring.

Nevertheless, in cases in which Communities of Practice are promoted by the organization itself (as suggested by Venters and Wood, 2007), in general it is necessary to restructure the company, and these groups are used as a means or as part of the strategy designed to achieve this restructuring.

Therefore, Communities of Practice are useful in the restructuring of companies, although there are other management tools that can also be used to achieve this. As a consequence, depending on the restructuring that needs to be carried out, it is necessary to assess whether Communities of Practice are the correct tool for the task or not.

5. What attitude should the members of a Community of Practice have in order to ensure its success?

The Communities of Practice capable of creating identity, confidence, and commitment within a group when the members of the Group are passionate about the practice, and are willing to share and participate by sharing their experiences and knowledge (World Bank, Andersen Consulting Education, Indiana University, Daimler Chrysler, Ford Motor Company, Schumberger, Efuture) are those which achieve a substantial improvement in the organization in an efficient manner.

Nevertheless, those groups that cannot create this environment, either because the members feel obliged to be part of the change or because there is not an atmosphere of confidence, will create obstacles for the organization in order to ensure that it does not achieve the chosen objectives, or that the cost of achieving them is very high (Medico, British Council).

The members of an organizational Community of Practice should have an open attitude towards personal learning (and sharing their own knowledge), as well as an open attitude towards the interests of the organization, since they are not integrated members of an isolated Community; rather, they are part of an organizational environment which must be taken into account. Thus, when both the visions of the Community of Practice and the organization coincide, both parties can achieve good results and maximize the capacity that Communities of Practice possess as a source of competitive advantages. If it is not the case, this is when the limitations of the Communities and the actual organizations are perceived, as both are limited in the achievement of their objectives: the Community relies on the willingness of the organization, and vice versa.

FUTURE WORK

This study presents the different context factors that influence the development of Communities of Practice. The organizations and their Communities of Practice are sensitive to different factors and this issue emphasizes the limitations of the Communities of Practice as a management tool and also the limitation of some organizations to start a process of Communities of Practice cultivation.

The Communities of Practice can be studied from an epistemic point of view (studying the communities' members and their relationships) or from structural parameters (studying the organizational

infrastructure needed to develop Communities of Practice). In both cases, Communities of Practice can be studied from different points of view. For example, Roberts 2006, suggests an analysis of Communities of Practice studying issues like power, trust and predisposition and Mutch, 2003, including the habits in the study. These epistemic factors affect the evolution of Communities of Practice and it would be interesting to analyze some different cases from this point of view. The influence of the leader in different Communities of Practice is also an interesting study because the leader is the key person in implementing the community's culture and work-methods. With a good leader, the community will probably exist in the future and with a bad leader it probably will not. Another possibility is to study organizational culture, infrastructure and the specific moment of its development in order to understand better if the development of Communities of Practice at that moment is the best management tool or not.

CONCLUSION

Contributions

The main contribution of our study is the understanding of different factors and their influence in the development of Communities of Practice. The concept of Communities of Practice has already been spread in the science community and in the organizational world. So now there is documentation from these two worlds that can be use to carry out in-depth studies of Communities of Practice depending on the organizations in which they have been implemented.

Various different authors that have contributed with original case studies (Thompson, 2005) which include the different ways of studying Communities of Practice. Authors such as Roberts, 2006 and Mutch 2003 also give different points for examining Communities of Practice. These different perspectives have been used to give a different way to analyze Communities of Practice and their organizations.

Limitations of the Study

The most important limitations to this investigation project are the following:

• The cases presented have been studied with the factors explained in the background. There are some other factors which could have been interesting to include in order to complete the cases presented.
• Most of the experiences have been studied in big companies. The case results would be more interesting if they included more SME cases. The problem is that it is very difficult to get documented experiences about Communities of Practice development in SMEs.
• The sample is made up of by experiences documented and published by other authors, which of course prevents the authors from having access to the information and knowledge needed to go deeper in their analysis.

General Interest

This chapter has been written bearing in mind a broad readership, ranging from academics and researchers (MSc and PhD students) to professional people in industry with an interest in the Knowledge Management field and in Communities of Practice.

The authors have prioritized a managerial point of view, looking at case studies, and emphasizing results in firms in challenging environments, considering their contribution to key subjects such as innovation, knowledge management, learning, technology, and motivational approach, all studied from this point of view.

The authors expect that academics and researchers will find the chapter useful in incorporat-

ing this Management approach to their advanced postgraduate and PhD materials on Communities of Practice. Industry professionals may obtain useful insight for re-considering management strategies, personnel relationship management and learning organizations.

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KEY TERMS AND DEFINITIONS

Case Studies: A detailed intensive study of a unit, such as a corporation or a corporate division that stresses factors contributing to its success or failure.

Communities of Practice: An active system in which its participants share knowledge based on their daily tasks. They share the meaning of this knowledge in their life within the community. The participants of the community are united in the community are united in the community's practice and in the meaning of said practice, both at the community level and at broader levels (Wenger, 1998).

Cultivation Model: A model of evaluation for communities of practice in the process of cultivation that makes it possible to estimate the probabilities of success for the proposal of creating communities at a specific moment and under a specific situation is included. The cultivation and integration of communities is a continuous process, due to which its evaluation must be performed periodically.

Knowledge Management: Managing the corporation's knowledge through a systematically and organizationally specified process for acquiring, organizing, sustaining, applying, sharing and renewing both the tacit and explicit knowledge of employees to enhance organizational performance and create value (Davenport, 1998).

ENDNOTES

[1] Lesser and Storck, 2001, quoted by Lave y Wenger (1991).

[2] Bukowitz and William, 1999, quoted by Furlong and Johnson, 2003.