Preface

Communities of practice (CoPs) have become increasingly influential within management literature and practice since being identified as an important mechanism through which individual, organizational and social knowledge is held, transferred and created. Their theoretical roots lie in the situated learning approach, but they have spread to the field of knowledge management, emerging as an important tool that managers and practitioners should know why, how and when to utilize. Doing so, however, is not a task without difficulties. First, because CoPs are, in some ways, spontaneous organizational forms that evolve over time due to their own affiliation process and their members’ activities. Second, because each firm and organization has to design its own set of tools to achieve its objectives and CoPs are just one of these tools. And third, because the interactions between CoPs and the inter and intra-organizational context of the firm is not yet fully understood and requires a deep consciousness and a systemic view. This Handbook of Research tries to connect academia with practitioners to achieve a more sound understanding of the managerial implications of CoPs as well as their opportunities and limits for knowledge management, which will foster innovation and help organizations to improve performance.

THE GENESIS OF THE COMMUNITIES OF PRACTICE IN THE KNOWLEDGE-BASED ECONOMY

The origin of studies about workplace practices in organizations is a natural consequence of the evolution of modern organization theory, which focuses on processes for sharing knowledge between the people and social groups in these organizations, in line with the appearance and development of the new, knowledge-based economic model dating from the middle of the 20th century, explaining the new productive work structure of the post-industrial society or knowledge society which grew up at that time.

In 1945, Frederick Hayek published his study on the importance of knowledge in society and, consequently, in the economy, making use of and divulging Alfred Marshall’s advanced ideas (1890), which had been forgotten, about the crucial role of this knowledge as a resource and productive factor in the creation of wealth and social transformation, and even of nature itself, thanks to technological development and the role of organizations and the entrepreneurs who direct them. Hayek’s contribution (1945) received recognition and grew in importance over time thanks to Daniel Bell’s 1973 study of post-industrial society (1973), Peter Drucker’s 1965 and 1993 studies of post-capitalist society (knowledge society) and de Fritz Machulup’s 1967 and 1980 studies of the birth of the knowledge-based economy. This process made it possible to define the characteristics of the change in the economic model over the centuries from the agricultural age to the modern industrial age and on to the current age of knowl-
edge: Gorey and Dobat (1996), OECD (1999); giving explanations of the importance of the models and techniques which active knowledge in organizations, making it the basis for the core competences and competitive advantages required by the contemporary economy (Davenport and Prusak, 1998; Bueno, 1998 and Bueno and Salmador, 2003).

Consequently, with this change of focus in the analysis of work and business processes, based on the processes of creation and exchange of knowledge between the people taking part in these operations, interest in investigating the role of work practices arises. During the 80s, the first studies in this area from the perspective of cognition in practice, interpretative and ethnography appeared along with focuses on enacting and storytelling, particularly the studies of Daft and Weick (1984), Orr (1987, 1990) and Lave (1988), among others, as explained by Brown and Duguid (1991).

THE DEVELOPMENT RESEARCH ON COMMUNITIES OF PRACTICE: CONCEPTUAL FOUNDATIONS

At the start of the 90s and at the end of the 20th century there was increased academic interest in the study of CoPs and in their use in different types of organizations’ professional management. In this respect, the mentioned studies by Orr (1996) and Lave and Wenger (1990) of are particular interest, emphasizing new ways of working and individuals’ participation in tasks.

In the same sense, the new theories about CoPs are based on the processes of organizational learning explained by Brown and Dugid (1991, 1998), the perspective of organizations’ configuration as Communities-of-Communities in which there are canonical practices and non canonical practices, given the complex processes created by and which simultaneously make up working, learning and innovating. This situation called for a redesigning of organization structure and behavior.

In a similar line of investigation and reflection, the concept of Ba was analyzed, investigated and proposed by the modern Japanese school of philosophy of knowledge led by Yuhiro Nonaka, which defines this concept as a context for sharing, creating and using knowledge between people who make us any such space, which may be physical, mental or virtual (Nonaka and Konno, 1998; Nonaka, Toyama and Konno, 2000), but which, above all, has the objective of creating knowledge or innovation in the organizations which base themselves on this productive resource for the creation of value (Nonaka, 1991, 1994; Nonaka and Takeuchi, 1995).

In this conceptual base for CoPs, starting with systemic relations between working, learning and innovating, the following contributions to creating the process of identity creating knowledge and, especially, cultivating knowledge, authors such as Wenger (1998), Wenger and Snyder (2000) and Wenger, Mc Dermott and Snyder (2002) are outstanding. Their studies show the importance of investigating the role of CoPs in the creation of value in contemporary knowledge-based economy, measured in terms of innovation, improved performance and, particularly, the creation and sustainability of competitive advantages, thanks to whose crucial role in the processes of current and emerging knowledge-based organization strategies (Bueno and Salmador, 2003).
OBJECTIVE AND PERSPECTIVES

This book will emphasize the managerial approach to CoPs and their limits and benefits of application, providing a number of case studies, lessons learned and guidelines from a sound conceptual and practical foundation.

The mission of this book is to contribute to a better understanding of what a community of practice is, the differences and similarities of COPs to other organizational forms, and how these tools can be applied in organizations for different purposes and in different contexts. As other organizational tools can be applied to achieve the same goals, the specific features as well as limitations of CoPs will be emphasized using a systemic approach of different frameworks and different expertises in the area.

This mission is achieved through the following objectives:

- **Conceptualization of CoPs.** This handbook will present the specific features of CoPs in an organizational context from different points of view that include knowledge and innovation.

- **Contextualization of CoPs.** This research collection will demonstrate the use of CoPs in different organizational contexts, in order to achieve better insight into their function, evolution patterns and results. Their emergence and use interorganizationally, within multinationals, in innovative contexts and in science will be an important way to compare differences and also common patterns on how CoPs can build spaces for the creation, development and transfer of knowledge.

- **Performance and Innovation.** In order to learn from and take advantage of all the benefits of CoPs, another main objective of the handbook is to show how CoPs can be cultivated to increase results considering different possibilities, such as technological tools, and also the individual motivational approach.

- **Knowledge Intensive Organizations.** Furthermore, the handbook aims to explore the relationship between CoPs and knowledge, outlining both their enhancement spiral and the risk of pitfalls.

- **Sharing and Experiencing.** In order to have a practical and in depth understanding of CoPs, another objective of the handbook is to present different experiences of organizations using CoPs and compare them with the conceptual and theoretical innovations in the field.

STRUCTURE OF THE BOOK

The book contains 25 chapters, gathered under five section headings.

- **Section 1, Conceptualising.** These six chapters deal with the main conceptual basis used in current CoP theory, from its cognitive relationship with the Japanese concept of Ba and the importance of dissemination in the creation of organizational knowledge in the contemporary economy, from a dynamic transfer perspective and the transformation of the organizations which are characteristics of the knowledge-based economy.

- **Section 2, Contextualising.** These four chapters deal with CoP functions in the various different organizational contexts in creative knowledge processes, examining, on the one hand, the conceptual relationships between Ba and CoP and, on the other hand, analyzing the creation of competitive advantages.

- **Section 3, Performance and Innovation.** These six chapters further the analysis of CoP functions in the influence they have in the increase of performance and innovation in the organizations in which they are introduced, with special emphasis on companies with intensive R&D processes.
Section 4, Knowledge Intensive Organizations. These four chapters analyze the importance of CoPs in the working and sustainable development of organizations that make intensive use of scientific and technological knowledge in their creation of value.

Section 5, Sharing and Experiencing. The five chapters in this last section present various different cases and experiences of CoP implementation in very varied organizations.

In Section 1 there are six chapters, as summarized below.

Chapter 1 outlines how a communities of practice (CoPs) perspective is used to unravel the actions and activities that facilitate management knowledge dissemination between organizations across space and time. The author also outlines some of the major differences between the groups engaged in management knowledge dissemination.

Chapter 2 analyzes the concept of communities of practice as a useful scope for sharing knowledge, presenting some key issues about a practical knowledge management approach. The authors, for this reason, present two cases studies in this chapter, including not only management but also knowledge creation and development, a richer focus for knowledge governance.

Chapter 3 establishes today’s competitive environment, where knowledge is a key strategic resource. In this chapter, the author defends the idea that knowledge held by individuals must be transformed into organizational knowledge and, nevertheless, be a source of competitive advantage.

Chapter 4 examines the concepts of good and bad communities of practice. The author explores how the concepts have been used in previous knowledge management, organizational learning and innovation research in the last decade, includes a comparative view of each concept and analyzes contributions, limitations and their nature.

Chapter 5 concentrates on the question of how power dynamics relate to the development of communities of practice within the organizational context of different European Megaprojects. The authors presents a Dutch community of practice case, “Partners in Business,” and also discusses the results of the case study while reflecting on and illustrating the advantages of considering power dynamics in CoP theory.

Chapter 6 outlines how the interest in and development of communities of practice has undergone exponential growth. The author also outlines, identifies and defines CoP characteristics compared with other types of groups and organizational structures, providing some guidelines on the future development of CoPs.

In Section 2 there are four chapters, as summarized below.

Chapter 7 proposes that emerging management strategies, which prescribe and aim to measure what goes on in a community of practice, may have unexpected and negative outcomes. The author also suggests that an impasse may arise between management and knowledge practitioners in divulging the quantity and quality of knowledge that can be made available for organizational use.

Chapter 8 focuses on the context factors that influence the development of Communities of Practice. To this end, the authors review different cases of Communities of Practice within various organizations based on the study from the perspective of organizational management.

Chapter 9 analyzes the knowledge-creating process that professors and doctoral students, from different countries and organizations, have developed in the Research Institute of the Universidad Autónoma de Madrid (Spain). These people work as a research community of practice and operate a knowledge-creating process for a BA. The author studies this process and describes both concepts in order to get a deep understanding of the relationships between these elements.
Chapter 10 explores questions of how the competitive environment, regional clustering and industry network structures influence the potential for developing firm level competitive advantages based on communities of practice. The author relies on primary sources and archival data to examine how managers can move toward competitive advantage by understanding CoPs in the different contexts in which they emerge.

In Section 3 there are six chapters, as summarized below.

Chapter 11. This chapter analyses the organizational conditions that foster the development of different people-focused knowledge sharing initiatives in medium-high and high technology companies, as well as the degree of influence of those initiatives on the ideation stage of innovation processes and on innovation performance.

Chapter 12 analyzes how performance evaluation of communities of practice will significantly impact an organization’s strategic focus, knowledge transfer, resource allocation and management performance. The author in this chapter discusses CoPs and their performance evaluation from a theoretical and practical perspective.

Chapter 13 focuses on a critical evaluation of the concept of community of practice and an assessment of the role of CoPs in knowledge creation and exchange at the various stages of the innovation process. The author also evaluates the contribution of CoPs to innovation success and organizational performance.

Chapter 14 analyzes how the existence of research-based knowledge-stewarding communities of practice within industry / research /government innovation collaborations has important implications, such as the Triple Helix Model, for innovation management practice. In this chapter the author presents four studies on collaborative innovation management and inter-organizational CoPs.

Chapter 15 presents an approach for assembling innovative information-based products and services by virtual cross-organization communities of practice. The author uses a case study and describes the mechanics allowing it to operate as a virtual community of practice and how the collective intelligence of the members is appropriated to ensemble innovative information-based products and services.

Chapter 16 opens a broad discussion about current and future technological support for knowledge sharing and learning, support that amplifies the scope of CoPs and facilitates members to interact in increasingly geographically distant companies putting knowledge closer together. This chapter also suggests the ideal evolution of tools for knowledge sharing and learning on Future Internet, the advantages their use could provide and the factors that authors maintain should be improved to turn this ideal tool into a reality.

In Section 4 there are four chapters, as summarized below.

Chapter 17 outlines how to gain a better understanding of different learning trajectories connecting external and internal communities of practice. The author presents the detailed research results of four internal CoPs by members of a single external community. Both young and senior members take part in this study.

Chapter 18 analyzes the emergent concepts of communities of practice and organizational identity, as well as their interrelationships in the context of a knowledge-based economy. The author focuses this chapter on new technological-based firms, and the propositions on the relations between both concepts are tested empirically in five case studies of new technology-based firms created at Madrid Science Park.

Chapter 19 investigates knowledge sharing within and between communities of practice in knowledge-intensive firms. The author also explores the implications of the influence of CoPs on the multiplicity factor, categorized as cognitive, relational and structural, in knowledge sharing in these firms.
Chapter 20 analyzes how to link communities of practice to knowledge creation and dissemination in the specific context of knowledge intensive organizations. In this chapter, the author aims to point out the role that CoPs may have in relation to knowledge sharing and innovativeness in the knowledge intensive context.

In Section 5 there are five chapters, as summarized below.

Chapter 21 investigates the concept of communities of practice with reference to ethnographic data from a range of creative multimedia SMEs in Manchester, UK. The author stresses that many of these communities are fragmented and fractured by the interplay of competitive commercial imperatives with professional obligations and loyalties. Ethnomethodology is used to suggest alternative ways to analyze the settings around situated decision making, practical reasoning and lived collaborations.

Chapter 22 investigates how to manage research knowledge and perform research activities in applied sciences universities by means of communities of practice. The author explains the tools that have been developed in order to address the needs of such a CoP in a research environment.

Chapter 23 presents a case study of implementation methodology in a knowledge management project, based on communities of practice in a particular type of public organization. The author also offers a guide for implementing CoPs in the Public Administration context.

Chapter 24 outlines key design features that may be necessary to cultivate communities of practice in order to be successful in the area of education. In this chapter, the author provides a case study of a successful inter-institutional CoP and recommends the principal factors and the best practices.

Chapter 25 describes a framework for developing and evaluating communities of practice initiated by local healthcare organizations and groups. The author also breaks down the implementation of CoP projects in medicine into manageable steps and presents an evaluation tool that could help develop an adequate evaluation process.

**FINAL REMARKS**

This book explains very important aspects of the relevance and representativeness of the state of investigation into the concept of CoPs and their degree of acceptance and the creation of a theoretical reference frame in contemporary society and economy. This relevance becomes clear on examining the wide variety of subject areas in the contents of the twenty-five chapters in this study, organized into five sections, each with its own area of interest, used to explain the practical and theoretical reach of CoPs. With regard to this, relevance can be demonstrated by the large numbers of case studies and CoP implementations in very different types of organizations and contexts; this diversity is dealt with in many chapters, from perspectives that are in favour of CoPs, in terms of various different processes of working, learning and innovating, for which knowledge sharing is used to create value, with the dissemination of knowledge inside and outside the organization, in other words, through external or internal CoPs, in the networking processes which are characteristic of contemporary society.

The book is also representative and of great interest and relevance internationally and in terms of different institutions considering the data explained below, which is a synthesis of the book’s contents and reach. Forty-six people from eleven different countries and all continents took part in the book. These investigators and experts belong to or work with twenty-eight different organizations, most of which are connected with R&D systems and technology and innovation transfer. Organizations which offer a considerable portfolio of different activities and areas of interest, representing government in-
stitutions, public bodies, industrial firms, hospitals and health centers, universities, investigation and technological centers.

In conclusion, this book analyses the current state of CoPs in a wide-ranging and rigorous manner, along with their beneficial relationships with the development and new organizational behavior of current social cooperation networks and the creation of core competences and competitive advantages, both with regard to the interest of each organization and with regard to the sustainable development of the whole of global knowledge economy.

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