The Limits of Communities of Practice

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INTRODUCTION

When knowledge management (KM) began to emerge in the late 1980s, it was seen as an innovative solution to the problems of managing knowledge in a competitive and increasingly internationalized business environment. At that time, the term was often used in conjunction with so-called expert systems that dealt with hard[1], structured knowledge (Hildreth, Wright & Kimble, 1999). During this period, knowledge was seen as something that had an independent existence; it could be captured from an expert, codified in a series of rules, and stored in a computer. However, many authors have argued that, in practice, KM was often little more than information management systems rebadged (Wilson, 2002).

More recently, there has begun to be recognition of the importance of softer, less structured types of knowledge (Hildreth, Wright & Kimble, 1999). There has been a growing awareness that knowledge is not found in rules, frames, cases, predicate logic, or document repositories but that other factors were at work. This inevitably raises questions about what these other factors are and how this new softer form of knowledge might be managed.

Communities of practice (CoPs) were identified by many as a means by which this softer type of knowledge could be created, shared, and sustained. From this, it was a small step to arguing that CoPs were in fact a new approach to KM that offered the solution to many of the shortcomings of the earlier, systems based attempts at KM. However, the concept of a CoP is built around a very different set of principles to those put forward by the proponents of KM, and it is not always clear that this argument will hold.

Much of what is now called KM has developed in a formal organization setting. In this setting, groups are often seen simply as collections of people who are brought together to complete a specific task; once the task has been completed, the group can be dissolved. These groups are often created in a top down fashion, and the structure of the group usually reflects the existing organizational hierarchy. The successful completion of the task (or repeated series of tasks) is usually the basis for financial or other reward. In contrast, CoPs tend to be self-perpetuating and self-directed. The focus of a CoP is not on a narrowly bounded task but on a living and dynamic practice; the rewards are intrinsic rather than financial. Authority and legitimacy are not a function of formal rank or hierarchy but of an informal status in the group. In summary, the members of a CoP have more in common with a troop of altruistic volunteers than a band of paid employees.

This contrast between the nature of CoPs and the demands of a high tech, global commercial enterprise raises two important questions that we will return to in the Communities of Practice Today section. First, do CoPs really offer a way to *manage* the softer aspects of knowledge? That is to say, can they be initiated and directed by management, or will the outcome always be the product of the emergent properties of a self-directed and self-organized group? Following on from this, the second question is: if they do offer ways to manage the softer aspects of knowledge, will they work in today's high tech and increasingly internationalized virtual world?

BACKGROUND: COMMUNITIES OF PRACTICE: A HISTORICAL PERSPECTIVE

When the term *communities of practice* was first used, it was used in relation to situated learning rather than knowledge management. The term was coined in 1991 when Jean Lave and Etienne Wenger (1991)

used it in their exploration of the activities of groups of non-drinking alcoholics, quartermasters, butchers, tailors in Goa, and midwives in the Yucatan. What linked these diverse groups was a mode of learning based on what might broadly be termed an apprenticeship model, although the concept of CoPs is not restricted to this form of learning.

Lave and Wenger (1991) saw the acquisition of knowledge as a social process in which people participated in communal learning at different levels depending on their authority in a group, that is, whether they were a newcomer to the group or had been an active participant for some time. The process by which a newcomer learns from the rest of the group was central to their notion of a CoP; they termed this process Legitimate Peripheral Participation (LPP). However, LPP is more than simply learning situated in a practice; it is learning as an integral part of a practice that give meaning to the world: learning as "generative social practice in the lived in world" (Lave & Wenger, 1991, p. 35).

LPP is both complex and composite; legitimation, peripherality, and participation each play a part in defining the other. Legitimation is concerned with power and authority relations in the community but is not necessarily formalized. Peripherality is not a physical concept or a measure of acquired knowledge, but concerned with the degree of engagement with the community. Participation is engagement in an activity where the participants have a shared understanding of what it means in their lives. Taken separately, each has no meaning, but taken together, they form the central thread of a CoP activity.

For Lave and Wenger (1991), the community and participation in it were inseparable from the practice. Being a member of a CoP implied participation in an activity where participants have a common understanding about what was being done, what it means for their lives, and what it means for the community. Thus, it would appear that CoPs with their concentration on situated learning and shared understanding might be well suited to the management of the softer aspects of knowledge, but can this idea be applied to the business world?

COMMUNITIES OF PRACTICE TODAY

Interest in CoPs continued to grow throughout the 1990s, and several attempts were made to redefine Lave and Wenger's (1991) original model. In particular, several attempts were made to redefine CoPs in a way that was more relevant to the commercial environment (e.g., Brown & Duguid, 1991, 1996). One of the most widely cited, business related definitions of a CoP was offered by John Seely Brown and Estee Solomon Gray in their 1995 article called "The People Are the Company":

At the simplest level, they are a small group of people…who've worked together over a period of time. Not a team not a task force not necessarily an authorised or identified group…they are peers in the execution of "real work". What holds them together is a common sense of purpose and a real need to know what each other knows.

The main surge in interest in CoPs and business came in 1998, when Wenger (1998) published the results of a ground breaking ethnographic study of a claims processing unit of a large insurance company. In this study, he argued that CoPs were formed through mutual engagement in a joint enterprise and that these CoPs exploited a shared repertoire of common resources (e.g., routines, procedures, artifacts, vocabulary). His argument was that the CoPs he studied (1) arose out of the need to accomplish particular tasks in the organization and (2) provided learning avenues within, between, and outside that organization. Thus, his view of the business was not of a single monolithic community, but a constellation of interrelated CoPs that can even spread beyond the borders of the host organization.

The original description of CoPs as isolated groups based on LPP was now replaced by a different view. According to Wenger (1998), a CoP could now be defined in terms of three constructs.

What it is About

The focus of the CoP is a particular area of activity or body of knowledge around which it has organized

itself. This is a joint enterprise in as much as it is based on a common or shared understanding that is continually renegotiated by its members.

How it Functions

People become members of a CoP through shared practices, and they are linked to each other through their involvement in common activities. It is this mutual engagement that binds the members of a CoP together in a single social entity.

What it Produces

The members of a CoP build up a shared repertoire of communal resources over time. Written files are a tangible example of this, although less tangible examples such as procedures, policies, rituals, and idioms may also form part of the repertoire.

The next step of linking CoPs to KM and the world of business came from the way in which Wenger describes the underlying processes that are at work in a CoP.

Linking Communities of Practice and Knowledge Management

In an earlier paper (Hildreth, Wright & Kimble, 1999), we argued that the various different approaches to KM often viewed knowledge in terms of mutually exclusive opposites. We used the terms hard and soft knowledge to describe these two opposites and argued that too often KM emphasized hard knowledge over soft. Our intention was not to add to the plethora of terms already used to describe knowledge but to attempt to bundle together a range of views so that the issues could be discussed without becoming too tied to a particular, pre-existing viewpoint.

We described hard knowledge as being unambiguous and unequivocal; it is something that can be clearly and fully expressed; it can be formalized, structured, and owned without being used. Hard knowledge is both abstract and static: it is about the world, but not in it. In contrast, soft knowledge is implicit and unstructured. It is the sort of knowledge that cannot be easily articulated, although it can be understood even if it is not openly expressed. It is often knowledge that is associated with action; it can not be possessed; it is about what we do and can only be acquired through experience.

More recently, we argued (Hildreth & Kimble, 2002) that the underlying problem of KM was not simply that it privileged one form of knowledge over another; it was that KM had failed to recognize that knowledge itself was a duality consisting simultaneously of both hard and soft knowledge. Drawing on the Chinese concepts of Yin and Yang—a perspective of balance and continual change—we argued that hard and soft knowledge were not mutually exclusive but mutually dependant; one could not exist without the other.

Knowledge is not made up of opposites; regarding knowledge in these terms is a false dichotomy. Rather than seeing knowledge as opposites, perhaps we should think of it as consisting of two complementary facets: a duality consisting simultaneously and inextricably of both [hard and soft] knowledge.

The use of the device of a duality is not new (see, for example, Orlikowski, 1992); however, viewing knowledge in this way does allow us to make a conceptual link between KM and CoPs.

In his work with CoPs at the insurance company, Wenger (1998) identified two key processes that formed a duality: participation and reification. He described participation as "the social experience of living in the world in terms of membership in social communities and active involvement in social enterprises" (p. 55) and reification as "the process of giving form to our experience by producing objects that congeal this experience into thingness" (p. 58).

Wenger emphasizes that, like LPP, participation and reification are analytically separable but are inseparable in reality. Participation is the process through which people become active participants in the practice of a community, and reification gives concrete form to the community's experience by producing artifacts.

With these concepts in place, CoPs can now be seen as a way to manage knowledge. In their day-to-day work, people can both negotiate meaning through participation in shared activities and project that meaning onto the external world through the production of artifacts. Wenger's (1998) work with CoPs claimed to show that not only could CoPs exist in a business setting, but that the concept of a CoP could be applied to the management of knowledge in such settings.

Since then, several other authors have taken this idea and sought to identify specific quantifiable business benefits that can be associated with CoPs (e.g., Fontaine & Millen, 2004; Lesser & Storck, 2001). However, one problem remains: almost all of the previous work on CoPs has been based on collocated CoPs. With the increasing globalization of business and the heavy reliance on information and communication technology (ICT), the question of whether CoPs become virtual remains unanswered.

COMMUNITIES OF PRACTICE: GOING ONE STEP TOO FAR?

Having now examined the background to the use of CoPs to manage knowledge in a commercial setting, we will now, as indicated in the introduction, address two main questions: Are CoPs really applicable to a business environment? Can a CoP ever be truly virtual? To answer these questions, we will mostly draw on material from a series of studies in a recently published book (Hildreth & Kimble, 2004).

Given that much of the work quoted in the previous section seems to be related to CoPs in a business setting, this first question might seem rather strange. However, while there is little doubt that CoPs exist in industry and even some evidence that CoPs can add value to a business, this is not the same as asking: Are CoPs really suitable for use in a business setting? The aim of this article is to offer a critical view of CoPs; it is our belief that until now too much emphasis has been placed upon identifying the real and potential business benefits of CoPs and too little on identifying the potential costs and disadvantages. This is not to say that we believe that CoPs cannot be of benefit to a businesses but simply that without an understanding of the limitations of CoPs, their true value to the world of business and commerce will not be fully understood.

CoPS IN THE BUSINESS ENVIRONMENT

In the introduction of this article, we briefly outlined the tension between the way in which most business organizations view a team or a task group and the way in which CoPs view themselves. Most formal organizations view groups as project teams or task groups: a group of people that can be brought together and controlled by the larger organization, a group that exists solely for the benefit of the organization. CoPs, on the other hand, are self-directed and self-motivated entities; the engine that drives a CoP is the shared interests of its members, which may not be the same as the interest of the wider organization.

In their study of communities of practice that disappear, Gongla and Rizzuto (2004) provide several interesting examples of how this tension resolves itself in IBM. They identify four common patterns of disappearance—CoPs that drift into non-existence, CoPs that redefine themselves, CoPs that merge with others, and CoPs that become formal organizational units. For example, they note that if an organization spotlights a CoP and tries to manage too much of what it is and what it does, "the community may remove itself completely from the organisational radar screen [the members] may remove it from the organisational spotlight by pretending to disperse, but in reality continuing to function outside of the organisations purview" (p. 299).

If the organization has become reliant on the work of the CoP, this could be a serious problem. If this is the case, then frequently the last of the list of reasons given above for CoPs disappearing will come into play, and the CoP will be taken over and become a formal organizational unit, an outcome that results in the loss of many of the supposed advantages of a CoP.

Much play is also made of Wenger's (1998) view of a business being a collection of interrelated CoPs that provide avenues for learning both within and beyond the boundaries of the organization. Again, while it is undoubtedly true that CoPs can allow the sharing of knowledge between different groups, the capricious nature of CoPs means that this particular outcome cannot be guaranteed. Hislop (2004) examined three case studies of CoPs in large European organizations and concluded that only one was successful in sharing knowledge between communities; the other two failed to do so because of a lack of shared identity and a lack of consensual knowledge. He argues that because of a strong internal sense of identity, CoPs can actually lead to less knowledge

sharing between communities rather than more. Similarly, Vaast (2004), in her four case studies of public and private sector organizations in France, noted in one case the strengthening of the internal sense of identity within a CoP resulted in a group of employees outside the CoP becoming marginalized.

The conclusion from these studies seems to be that CoPs as self-managing and self-directed entities may be of value to a business organization, but precisely because they are self-managing and self-directed, their contribution to the organization will always be uncertain. In this sense, the role that CoPs can play in core business activities must always remain peripheral.

CoPs IN THE VIRTUAL ENVIRONMENT

Internet-based networking technologies, which can provide a convenient single platform for groups or networks of groups to form within larger organizations, have led to a proliferation of various forms of virtual groups and communities. Subsequently, there has been much discussion about whether these virtual groups are CoPs or some other form of group.

Lueg (2000) draws a distinction between virtual and distributed CoPs based on what he claims are two salient features of a CoP: where the learning takes place and where the action takes place. He concludes that CoPs are deeply rooted in the lived in world and that moving CoPs to the virtual world raises some significant conceptual problems.

Rather than attempting to deal with virtual CoPs, Brown and Duguid (2000) coined the phrase "Networks of Practice" (NoPs) to describe groups of people who are geographically separate and may never get to know each other personally but share similar work or interests. Thus, NoPs share many of the features of CoPs but are organized at a more individual level than CoPs and are based on personal rather than communal social networks.

In a study of job seeking activity, Granovetter (1973) introduced the notion of strong and weak social ties. In terms of the above description, CoPs are characterized by strong social ties whereas NoPs are characterized by weak social ties. In this network view of virtual communities, CoPs are seen as providing a collocated hub for the wider network: providing a tightly knit subnetwork that serves as knowledge generating node for the larger NoP. CoPs can also act as bridges or brokers, drawing together different groups and combining knowledge in new ways. Finally, they can provide the access points for individuals to engage with the wider network and to establish a local identity within the larger organization.

Previous research has shown that the most common distributed form of a so called virtual CoP has a collocated active core (Hildreth, Kimble & Wright, 1998), which tends to support the networked view of distributed working. A more recent example of this was provided by Lundkvist's (2004) study of customer networks as sources of innovation. This case study was based on a long-term study of the Cisco Systems newsgroup, which identified user networks as peripheral and yet vital sites of innovation. In this case, the collocated core of the network was provided by a group of university technicians.

If wholly virtual, CoPs pose significant problems. What of the applicability of geographically distributed CoPs to the problems of knowledge management? In particular, how might the balance between reification and participation be maintained in virtual working? Hildreth (2003) describes how a geographically distributed CoP managed both hard (reified) and soft (social) knowledge. In this situation, it might have been expected that sustaining participation would be more difficult, and therefore, reification would play a greater role. However, the findings of the case study showed that this was not necessarily the case.

While the group was able to sustain itself using e-media, it was still dependent on the development of relationships in the physical environment through face-to-face meetings. A shared artifact, such as a planning document, did play an important role in virtual working, but the importance of social relationships remained paramount. Here the planning document stimulated discussion and problem solving, but through the process of working on it, it also acted as a focus for further participation.

A similar account can be found in Bradshaw, Powell, and Terrell (2004) that describes how a team of remote workers gradually developed into a CoP. They describe not only how the group deployed a variety of technologies to maintain contact but also the efforts that went into building commitment, ownership, engagement, and focus in the group. In this case, the members of the group were all engaged in

collaborative research. Writing about their work and presenting papers for peer review was seen as a key factor in maintaining cohesion and developing the community's shared understanding of goals, development of knowledge, and sense of belonging.

CONCLUSION AND FUTURE TRENDS

CoPs began life as a way of describing the process of informal situated learning that took place in certain types of group. From here, the concept has been extended first into the formalized, hierarchical, and task centered world of business and commerce and later into the rather more esoteric world of knowledge management. The aim of this article is not to dismiss the work that has been done in this area. The authors do not wish to argue that CoPs do not exist in business, that CoPs are of no value to business, or that CoPs have no place in knowledge management. It is simply that we believe that in much of the current literature in this area, too much stress is placed upon the supposed business benefits of CoPs and too little on the problems of CoPs in a business setting.

Perhaps the most obvious area where this is the case is the singular failure to examine the consequences of having significant business activities built around self-directed, semi-autonomous groups such as CoPs. Gongla and Rizzuto's (2004) study is almost unique in examining this aspect of CoPs. We believe that too many authors focus exclusively on the creating and sustaining of CoPs without sufficient concern for the other end of the life cycle. We would argue that without a "warts and all" understanding of the reason for having and not having CoPs, their full potential will never be realized. Similarly, there is a paucity of studies which show CoPs either failing to deliver benefits (e.g., Hislop, 2004) or even acting in a way that could be seen as counterproductive to the wider business goals (e.g., Vaast, 2004). Again, our point here is not to try to show that CoPs fail but to try to gain a more balanced understanding of the strengths and weaknesses of CoPs as a solution to business problems.

Similarly, there seems to be an often unquestioned assumption that CoPs will seamlessly translate from the collocated physical world to the geographically distributed virtual world. Few would argue that the shift to the virtual is not a real feature of today's world, but few seem to have thought through the consequences for CoPs. Instead of inhabiting a world of fixed roles with easy access to collocated resources, today's workers are increasingly based in an individualistic world of weak ties where resources are frequently obtained through personal networks and individual relationships. Rather than being embraced by a collective CoP, workers often find themselves functioning as isolated individuals and building up networks, one contact at a time. Again, paradoxically, as social networks such as NoPs become more important to organizations, the fundamental unit for many examples of virtual working is not the group but the individual. This is not to say that collective groups such as CoPs and teams have ceased to be relevant but simply that the difficulty of building, and maintaining the strong social ties needed to build a sense of community in a virtual environment should not be underestimated.

In conclusion, we would like to urge both academics and practitioners who work in this area to take a moment to reflect on the current surge of interest in CoPs. There is a natural tendency among those who are enthusiastic and passionate about a topic to ignore, or simply not see, the downside. We also believe that CoPs have the potential to make a significant contribution to certain areas of the commercial world; however, we also believe that if CoPs are to reach their full potential, a more balanced view is needed.

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KEY TERMS

Emergent Properties: A systems concept from which it is proposed that a whole system contains properties which are not seen within any of its components or subsystems. It gives rise to the idea that a system is more than the sum of its parts.

Expert Systems: Information systems which contain and help disseminate expert knowledge.

Information Management: The management of all aspects of information in an organization, generally seen to encompass technical, human, and organizational.

ENDNOTE

[1] The terms hard and soft knowledge are dealt with in §2.1