# Shaping Social Structure in Virtual Communities of Practice

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## INTRODUCTION

Practice, that is, the execution of work relevant tasks, can take two forms: actual and espoused practice (Brown & Duguid, 1991). Espoused practice is formally and deliberately planned: formal organizational structuring, product manuals, error detection, and correction procedures represent just a few examples. Actual practice represents the solutions to problems and the execution of tasks as they really happened in a given context. Processes of knowledge generation and transfer are different for espoused or actual practice (Orr, 1996). While traditional modes of organizing work practice focus on espoused practice, newer organizational forms focus on actual practice: Communities of practice are groups of people bound together by shared expertise and passion for a joint enterprise on behalf of an organization (Wenger, 1998). To support effective work practices in an ever more distributed work environments, collocated CoPs are complemented by virtual communities of practice (VCoPs). Its members interact supported by collaborative technologies in order to bridge time and/or geographical distances. Toolkits of computer-mediated environments facilitate community building in addition to personal interaction (Hinds & Kiesler, 2002; Walther, 1995; Wellman et al., 1996).

There is a shared understanding that VCoPs are an especially effective organizational form for knowledge creation both within companies (Kogut & Metiu, 2001; Nahapiet & Ghoshal, 1998; von Krogh, Spaeth & Lakhani, 2003) and between companies (Constant, 1987; Vincenti, 1990). Therefore, VCoPs are managerially desirable forms of virtual communities (Rheingold, 1993; Smith & Kollock, 1999; Wellman et al., 1996) in which learning in practice takes place; that is, professionals stick together because of exposure to common problems in the execution of real work. The "glue" which binds them together is a powerful mixture of shared expertise and experience, as well as the need to know what each other knows. Given that VCoPs offer such potential to enhance intellectual capital and to enrich social processes within companies, we look more closely at the social and knowledge generation processes within VCoPs from a *managerial point of view*. Viewed from this angle, VCoPs represent a difficult challenge for managers who want to profit from using them as an arena for desirable learning in practice. Although VCoPs are believed to be a desirable organizational form for knowledge generation, they are preferably modeled as a rather emergent phenomenon and believed to be only marginally manageable. Thus, on one hand, managers are urged to believe that VCoPs are something beneficial while, at the same time, they are told that VCoPs cannot be managed deliberately.

## BACKGROUND

Studies of CoPs bring together studies from an ethnography of work (Orr, 1996) with theories of situated cognition (Lave, 1988, 1991; Lave & Wenger, 1991; Suchman, 1987). *In situ* learning context variables are becoming central research questions. A large part of the daily generation, application, and

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internalization of knowledge is achieved during learning in practice. If one wants to understand social learning processes, one has to analyze the contextual embeddedness of actors (Resnick, 1991). Learning in practice is delineated by the web of relationships between actors and takes place in a social and culturally constructed environment, the community. During processes of situated learning in VcoPs, knowledge is generated that cannot easily be articulated or captured. This sort of knowledge has been labeled *sticky* (Szulanski, 2003; von Hippel, 1994), *tacit* (Nonaka, 1994; Polanyi, 1967), and *declarative* (Cohen & Bacdayan, 1994). Individual and collective experiences as well as internalized work knowledge fall into this domain. VCoPs are arenas within which such social learning by doing is taking place (Lave, 1991; Levitt & March, 1988). Learning in practice not only enriches individual knowledge but also strengthens the identities and roles of actors within the learning community: Newcomers learn from old-timers by the legitimization to participate in certain activities as part of the practice in the community. New members first participate as peripheral community members. By continual learning and social identity as well as role building, they become core members This process has been termed *legitimate peripheral participation* (Lave & Wenger, 1991).

Based on the discussion of the learning processes in CoPs, we accept the basic proposition which legitimates the importance of CoPs from a managerial point of view: *VCoPs enhance the innovativeness and the productivity of individual actors and collectives beyond the degree of formal organizational structures.* Yet, albeit the acceptance of the basic propositions concerning relevancy of VcoPs, the question of manageability still remains.

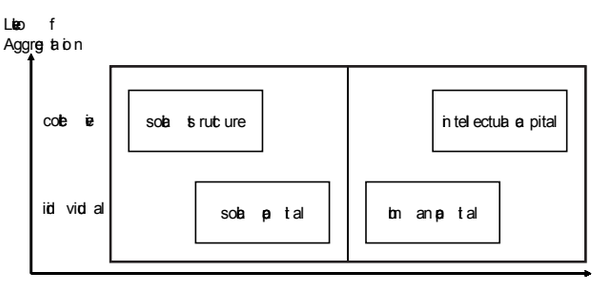
## KNOWLEDGE GENERATION AND DIFFUSION WITHIN VCoPs

In the treatment of VCoPs identity building, voluntarism, regularity, and experience through actual work practice are given central attention. This puts into perspective some prevailing and traditional instruments for learning and knowledge creation like seminaries, intranet manuals, e-learning modules, and workshops. These instruments, implemented as complements to formal job descriptions, are thought to be deliberately manageable. Because the environment of knowledge generation processes is assumed to be observable, foreseeable, and/or controllable, they can be planned and successfully implemented according to ex-ante considerations (Mintzberg & Waters, 1985). In contrast hereto, the central concern of knowledge creation processes within CoPs is to install learning as an integral part of everyday practice. Emphasis is placed on the rather informal nature of knowledge dynamics in CoPs (Orr, 1996). In this view, productive knowledge generation and exchange in VCoPs is a rather emergent phenomenon because the environment of knowledge generation processes is assumed to be unobservable, uncontrollable, and/or unforeseeable.

The view of knowledge generation in VCoPs as an emergent phenomenon should cause a natural resistance of managers to invest in VCoPs because of the uncontrollable and immeasurable character of possible outcomes. Given such a managerial reluctance against VCoPs, one may begin to question whether VCoPs will remain the praised form for knowledge creation in actual practice. It seems that common sense needs to be established that VCoPs are at least partially manageable. Most helpful in this respect are transformation models indicating whether there exist manageable rules and environments for CoPs which influence the possible outcomes in a desired direction depending on situational characteristics.

A conceptual framework reflecting this claim is presented in Figure 1. It delineates a causal chain between a construct called collective social structure of VCoPs (macro-level) as the starting point

*Figure 1. Building blocks of the proposed transformational framework of VCoPs*



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