

A Theory-Based Approach to the Relationship between Social Capital and Communities of Practice

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Abstract: There is almost a consensus that tacit component of organisational knowledge is of critical strategic importance because, unlike explicit knowledge, it is both inimitable and appropriable. Because of its characteristics, organisational tacit knowledge is usually created and shared through highly interactive conversation and shared experience, i.e., through a socialisation process. At the firm's level, the effectiveness of the socialisation process depends on the firm's social capital. At group level, it has been argued that communities of practice form the basis of a firm's ability to create and share tacit knowledge. Therefore, investigating the relationship between social capital, communities of practice and individual human action is crucial in understanding the dynamic of cross level knowledge creation and utilisation and in understanding organisational learning process. In order to study this relationship Giddens' theory of structuration is used as it provides an integrating meta-theory that recognises social reality as constituted by both subjective human actors and by objective institutional properties and attempts to articulate a process-oriented approach that relates the realm of human action and institutional realm. Based on Giddens' theory a model of the interaction between human action and social capital of the firm is developed. According to this model such interaction is mediated through a firm's communities of practice, which are conceptualised as the means for realising the different types of modality between social capital and human action. Such conceptualisation of a firm's communities of practice as the means for realising the different types of modality between social capital and human action provides a fine-grained approach to study the impact of their elements, i.e., shared repertoire, mutual engagement and joint enterprise, on the structural, relational and cognitive dimensions of a firm's social capital respectively. In addition, it explicates the duality of firm's communities of practice, namely: they are both the medium and the outcome of collective human action. This model also shows the need for further research in two areas. First is the study of the constraining roles of a firm's communities of practice in creating and sharing organisational tacit knowledge. Second is the study of social capital influencing organisational members in their relation to communities of practice

Keywords: Knowledge management, social capital, communities of practice, structuration theory

1. Introduction

There is almost a consensus that tacit component of organisational knowledge is the most important determining factor in the competitive position of the firm (Brown, J. and Duguid, P. 1991; Davenport, Jarvenpaa and Beers 1996; Drucker 1993; Grant 1996; Kogut and Zander 1992). In order to understand the nature of this tacit component, organisational knowledge is analysed along two dimensions: the epistemological and the ontological. The former concerns the modes of expression of knowledge, namely, Polanyi's distinction between explicit and tacit (implicit) knowledge. The latter relates to the locus of knowledge, which can reside at the individual or collective levels. Using these two dimensions of explicit/tacit (implicit) and individual/social knowledge, four different types of organisational knowledge (Table 1) was identified (Spender 1996).

Table (1) Different types of organisational knowledge (Spender 1996)

	<i>Individual</i>	<i>Social</i>
<i>Explicit</i>	Conscious	Objectified
<i>Implicit (Tacit)</i>	Automatic	Collective

The first type, individual explicit knowledge (or conscious knowledge) is typically available to the individual in the form of facts, concepts, and frameworks that can be stored and retrieved from memory or personal records. The second type, individual tacit knowledge (or automatic knowledge) may take many different forms of tacit knowing, including theoretical and practical knowledge of people and the performance of different kinds of artistic, athletic, or technical skills. The other two elements of organisational knowledge are social explicit knowledge (or objectified knowledge) and social tacit knowledge (or collective knowledge). The latter represents the knowledge that is fundamentally embedded in the forms of social and institutional practice and that resides in the tacit experiences and enactment of the collective (Brown, S. and Duguid, P. 1991). Spender argues that, "collective knowledge is the most secure and strategically significant kind of organisational knowledge" (1996, p.52). This collective knowledge is relation-specific, i.e., it exists between rather than within individuals. It is embedded in the individuals and is usually created and shared through highly interactive conversation and shared experience. The tacit component of organisational knowledge, i.e., automatic and collective, is often assumed to be difficult to imitate (Nelson and Winter 1982) and its possession may be a source of competitive advantage. As articulated by Spender and Grant (Spender and

Grant 1996), p. 8) "...knowledge which is embodied in individual and organisational practices... cannot be readily articulated. Such knowledge is of critical strategic importance because, unlike explicit knowledge, it is both inimitable and appropriable. Because of its characteristics, tacit knowledge is usually created and shared through highly interactive conversation and shared experience, i.e., through socialisation process (Nonaka 1994). At the firm's level, the effectiveness of socialisation process depends on the firm's social capital, i.e., "the resources embedded within, available through and derived from the network of relationships possessed by an individual and social group" (Nahapiet 2000) through its structural and density cognitive aspects (Jansen, Van den Bosch and Volberda 2005). At group level, it has been argued that communities of practice are a company's most versatile and dynamic knowledge resource and form the basis of a firm's ability to create and share tacit knowledge and to learn from experience (e.g., (Preece 2003; Wenger, E 2000).

Having identified the main factors that affect the effectiveness of tacit knowledge creation and sharing at firm's level, i.e., social capital, and at group level, i.e., the existence of communities of practice, the question now is "How are these two factors interrelated and how does each affect the other?" The answer to this question is crucial in understanding the dynamic of across levels knowledge creation and utilisation (Nonaka and Takeuchi 1995) and in understanding organisational learning process (Crossan, Lane and White 1999). Nevertheless, there are only two published papers that investigate the relationship between communities of practice and social capital. In the first paper, Lesser and Prusak (Lesser, Eric and Prusak 1999) hypothesised that communities of practice are valuable to organisations because they contribute to the development of social capital, which in turn is a necessary condition for knowledge creation, sharing and use. In the second paper, Lesser and Storck (Lesser, E and Storck 2001) investigated the issue of how communities of practice create organisational value, by conceptualising a community as an engine for the development of social capital. Based on a study of seven companies in which communities of practice are acknowledged to be creating value, they argue that the social capital resident in communities of practice leads to behavioural changes, which in turn positively influence business performance. However, while the work of Lesser and Prusak (Lesser, Eric and Prusak 1999) and Lesser and Storck (Lesser, E and Storck 2001) were the first that point out the possible relation between organisation's communities of practice and its social capital, the lack of theoretical foundations hinders a closer examination to the recursive and dynamic nature of such relation.

To this end, the main objective of this work is to develop a theoretically grounded approach to study the relation between communities of practice and social capital. In order to achieve this objective Giddens' theory of structuration will be used. The remainder of this paper is organised as follows. After introducing the main concepts of Giddens' theory of structuration, social capital and organisation's communities of practice will be described in terms of these concepts. Next, a structural model of social capital and organisation's communities of practice is presented. The paper then concludes by discussing the significance and contribution of this work, as well as the possible areas of future research.

2. Overview of structuration theory

Giddens' structuration theory (Giddens 1976, 1979, 1984) is an integrating meta-theory that recognises social reality as constituted by both subjective human actors and by objective institutional properties and attempts to articulate a process-oriented approach that relates the realm of human action and institutional realm.

2.1 Social structure

According to structuration theory social structure is defined as recursively organised set of rules and resources that has a virtual existence outside of time-space (Giddens 1981), p. 172). The rules are social conventions that contexts of their application are well known. By resources Giddens means "capabilities of making things happen... of bringing about particular states of affairs" (Giddens 1981) p. 170). In addition, social structure is derived from a cumulative history of action and interaction among the members of a social system and depends upon their consent and competence. Therefore, its production and reproduction cannot be disembodied from agents who enact and interpret its dimensions. As structure is considered as an abstract property of social systems that is situated in time and space and has only virtual existence (Giddens 1984), p. 17), it is thus more appropriate to speak of social systems as exhibiting "structural properties" rather than as having structures. Giddens (Giddens 1979) isolates the three dimensions of social structure: signification, domination, and legitimation. Structures of signification refer to social rules that determine what constitutes meaning and govern communication process. Structures of domination are "asymmetries of

resources" that agents draw upon in exercising power and in the sustaining of power relations in and between systems of interaction." (Giddens 1986)p.93). Resources reflect the capabilities of actors to act intentionally (Giddens 1982). Giddens used the term "facility" for two distinct types of resources—authoritative and allocative resources. Authoritative resources refer to capabilities, which generate power by having command over persons. Allocative resources are capabilities, which generate power by having command over objects or material. Finally, structures of legitimation refer to norms, or rules, that actors draw upon in the sanctioning of their own and others' conduct in interaction. Norms include rights and obligations expected of actors in interaction such as codes of conduct.

2.2 Human action

The realm of human action refers to actual arrangements of people, objects, and events in the minute-by-minute flow of social life's unfolding. Giddens specifies that all human interaction is inextricably composed of structure of meaning, power, and moral framework. In other words there are three key processes of human action during interaction, namely: communication, the exercising of power and sanctioning of conduct.

2.3 Duality of structure and modalities of structuration

The key principle in structuration theory is that of duality of structure, namely: human action is enabled and constrained by structure, but structure is also the result of human action. Thus structure is both the medium and outcome of action that it recursively organises. The duality of structure in interaction can be understood as follows: Agents communicate, exercise power and sanction their own behaviour and that of others by drawing on modalities (stocks of knowledge, rules and resources), and in doing so produce and reproduce (with possible transformation) structures of signification, domination and legitimation. (Giddens 1982). The linkage between the realms of social structure and human action is referred to as the "process of structuration", namely, the process by which the duality of structure evolves and is reproduced over time space (Giddens 1979). This process is realised through three "modalities": interpretive schemes, resources, and norms. Interpretive schemes are standardised, shared stocks of knowledge that humans draw on to interpret behaviour and events, hence achieving meaningful interaction. Actors draw upon interpretive schemes (mutual "stocks of knowledge") that mediate communication. This not only enables (and constrains) communication, but in drawing on interpretive schemes, actors reproduce structures of signification (Giddens 1979). Resources are the means through which intentions are realised, goals are accomplished, and power is exercised. Finally, norms are the rules governing sanctioned or appropriate conduct, and they define the legitimacy of interaction within a setting's moral order. Norms thus enable and constrain action and through their invocation in interaction, actors reproduce structures of legitimation. These three modalities determine how the institutional properties of social systems influence deliberate human action by affecting the way people communicate, enact power, and determine what behaviours to sanction and reward. They also determine how human action constitutes social structure when structured social practices are institutionalised as they become deeply endured in time and expand in space, i.e., acknowledged widely by actors (Giddens 1982). Figure (1) displays Giddens' conception of how the two realms of social organisation, action and institution, are related.

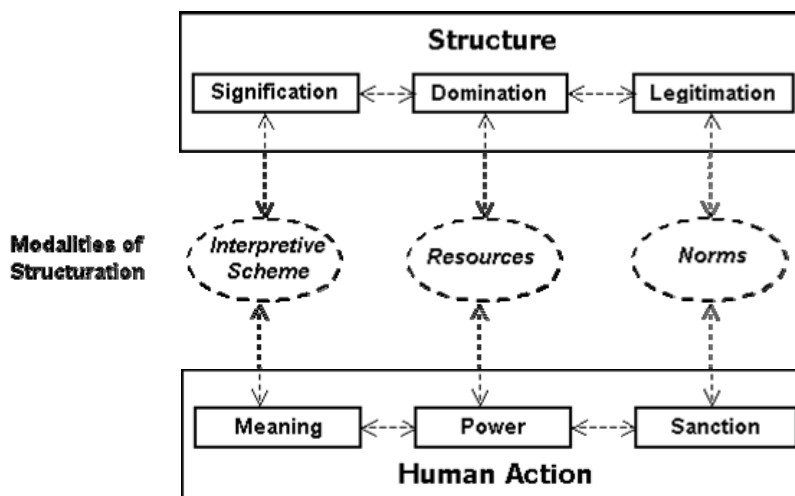


Figure (1): The interaction between social (human) action and institutional properties of structure as mediated by the three modalities of structuration (adopted from (Giddens 1984))

3. Social capital and communities of practice: A structuration perspective

3.1 Social capital

Leana and Van Buren (Leana and Van Buren 1999) define social capital as "...collective goal orientation and shared trust, which create value by facilitating successful collective action". Social capital thus comprises both the network and the assets that may be mobilised through that network (Burt 1992; Nahapiet and Ghoshal 1998). Social capital is also seen as a "collective good" and is formed by bonding and bridging of individuals in an organisation (Adler 2002). While social capital is perceived to be beneficial to the organisation, it can also have some detrimental influence in some ways (Newell 2004). Social capital is also believed to impede value creation process by limiting new sources of information and trust among people (Edelman 2004). Nahapiet and Ghoshal (Nahapiet and Ghoshal 1998) have characterised social capital in terms of three interrelated dimensions: cognitive, structural, and relational. The first dimension is the cognitive dimension deals with the content of the social capital and refers to "those resources providing shared representations, and systems of meaning among parties" (Nahapiet and Ghoshal 1998) p. 244) such as shared codes, language, and narratives. This dimension is thus closely related to structures of significance. The second dimension, structural dimension, refers to the overall pattern of connections that enable individuals to identify others with potential resources that they may not have at their own disposal. In other words, it refers to the impersonal configuration of linkages between people or unite (Granovetter 1992). As the need for these connections stems from asymmetries of resources this dimension is closely related to structures of domination. Finally relational dimension describes the kind of personal relationships individuals have developed with each other through a history of interactions such as trust, obligations, expectation, and identification. Therefore, this dimension is closely related to structures of legitimation (Granovetter 1992; Nahapiet and Ghoshal 1998).

Based on the previous discussion social capital can be conceived as one of the possible manifestations of the structural properties of an organisation as summarised in Table (2).

Table (2): Relationship of social capital and Giddens's social structure

Dimensions of Social Structure	Corresponding Dimensions of Social Capital
Signification	Cognitive
Domination	Structural
Legitimation	Relational

3.2 Communities of practice

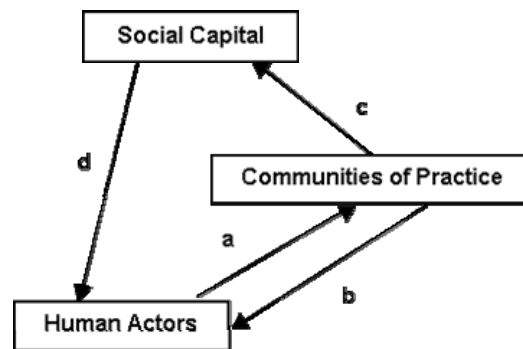
Lesser and Prusak (Lesser, Eric and Prusak 1999) define community of practice as "collections of individuals bound by informal relationships that share similar work roles and a common context". This definition highlights two important features of communities of practice. First is the contingent nature of community of practice because of the personal basis upon which relationships among the community's members are formed, and common tasks, contexts, and work interests they share. Second is its dynamic nature as the word "practice" refers to the dynamic process through which individuals learn how to do their jobs by actually performing tasks and interacting with others performing similar tasks" (Lesser, Eric and Prusak 1999). Wenger (Wenger, Etienne 2000) argued that community of practice consists of three basic elements: joint enterprise, mutual engagement and shared repertoire. Joint enterprise refers to community's members shared understanding of their situation. Therefore, this element is considered as a manifestation of interpretive schemes that community's members draw upon to reach agreed-upon interpretations and hence achieving meaningful interaction. Mutual engagement refers to the ties that bind members together into a social entity. It is about "how learning takes place through joint activities, but also how relationships and trust are established, how the meanings of what members learn are negotiated, and how the joint enterprise is defined and redefined over time" (Wenger and Snyder 2000) p. 208). Therefore, this element corresponds to norms that govern sanctioned or appropriate conduct among community' members. Finally, the shared repertoire refers to the communal resources that members have developed over time through their mutual engagement. These communal resources include routines, lessons learned, sensibilities, artefacts, standards, tools, stories, vocabulary, styles, and so on. This repertoire embodies the community's accumulated knowledge and, therefore, corresponds to the resources that community's members use to realise their intentions and accomplish their goals.

Based on the previous discussion communities of practice are conceptualised as the means for realising the different types of modality between social capital and human action.

4. Structuration model of social capital and communities of practice

In the previous section social capital is conceptualised as one of the possible manifestations of the structural properties of an organisation and communities of practice are conceptualised as the means for realising the different types of modality between social capital and human action. Based on this conceptualisation a structuration model of social capital and communities of practice is developed (Figure 2). This model recognises four influences that operate continuously and simultaneously in the interaction between human actors, social capital and communities of practice, namely:

- COP as a product of collective human action (*arrow a in Figure 2*),
- COP as a medium of collective human Action (*arrow b in Figure 2*),
- Impact of COP on social capital (*arrow c in Figure 2*)
- Social capital conditions the interaction with/within communities of practice (*arrow d in Figure 2*)



Key

Arrows	Type of Influence	Nature of Influence
a	COP as a Product of Collective Human Action	Communities of practice are the outcome of such human action as collaboration, negotiation and apprenticeship
b	COP as a Medium of Collective Human Action	Communities of practice facilitate and constraint human action
c	Impact of COP on Social Capital	Communities of practice influence the various dimensions of social capital through mutual engagement, joint enterprise, and shared repertoire
d	Social capital conditions the Interaction with Communities of Practice	Social capital influences organisational members in their relation to communities of practice

Figure (2): The structuration model of social capital and communities of practice

COP as a product of collective human action (*arrow a in Figure 2*): As argued by Wenger and Lave (Wenger and Lave 1991) p. 98) communities of practice are composed of groups of individuals who are united in both of action and in the meaning that action has. Communities of practice arise naturally, are not formulated or controlled by management, set their own leadership, and follow their agenda (Wenger and Snyder 2000). Moreover, each community of practice

- Sets its goals- understanding their specialty and its applications
- Determines membership boundaries -the group itself decides who is in, who is out, who are the respected leaders and who are the more casual followers,
- Shapes personal relationships among its members- from casual acquaintance to friendships to deep emotional bonds together with generalised reciprocity. The generalised reciprocity implies a sense of mutual commitment to the community, i.e., one member may help another simply because they belong to the same community, not because of a personal relationship, and finally
- Produces collective goods -the shared and enhanced understandings and expansions of professional knowledge in the organisational context (Brown, J. and Duguid, P. 1991).

COP as a medium of collective human Action (*arrow b in Figure 2*): Wenger and Lave (Wenger and Lave 1991) p. 98) regard a community of practice as “an intrinsic condition for the existence of knowledge”. The notion of "practice" implies that the community’s members concentrate on learning that emerges only through working, or actually practicing one’s craft. Because of their personal interaction, community’s members generate and share new knowledge about how to do their job and how to act in certain settings that go beyond the "canonical" or official company’s manuals and training materials (Duguid and Brown 1991).

Moreover, as community's members interact and contribute their knowledge to the community the sense of mutual engagement emerges. Through collaboration a CoP also generates a joint enterprise, a common, shared understanding of events, an action orientation for dealing with such events the next time they arise. Negotiation of a joint enterprise gives a sense of coherence and purpose to the COP. Finally, a COP's shared repertoire, such as stories, jargon, theories, forms, and other resources forms a stock of knowledge that is developed and can be utilised by its members (Iverson and McPhee 2002). Moreover, Lave and Wenger (Lave and Wenger 1991) coined the term "legitimate peripheral participation" to account for the way learning involves participation in a community of practice. In such a community, a newcomer learns from old-timers by being allowed to participate in certain tasks that relate to the practice of the community, i.e., s/he must go through an apprenticeship process. Over time the newcomer moves from peripheral to full participation.

While the role of communities of practice in facilitating collective human action is discussed in the previous paragraph, they may also have constraining roles. At the community level, as participating in a community is jointly determined by the candidate and community members the wish to join does not necessarily mean that the candidate is allowed into the community. At the firm level, research has shown that core rigidities and competency traps may evolve when community's members attempt to preserve the status quo (Leonard-Barton 1992; Levitt and March 1988). Such situation impedes the creation of new insights and communities of practice may turn into cages in which individuals learn not to learn (Teigland 2003; Wenger, E 2000). Moreover, in absence of knowledge integration mechanisms and intra-communities interaction, communities of practice may become "knowledge silos" that hinder knowledge sharing at firm level.

Impact of COP on social capital (arrow c in Figure 2): Conceptualising communities of practice as the means for realising the different types of modality between social capital and human action allows a closer examination of the impact of COP on social capital. Communities of practice affect the structural dimension of social capital in two ways. First, they provide their members with shared repertoire of stories, jargon, theories, forms, and other resources form a stock of knowledge that can be utilised by members. Second, they provide the opportunity for their members to develop a network of individuals who have similar interests and helping them within the community make connections with one another (Lesser, Eric and Prusak 1999). In relation to the relational dimension of social capital the mutual engagement element of communities of practice foster the interpersonal interactions necessary to build a sense of trust and obligations (Lesser, Eric and Prusak 1999). By interrelating, members are motivated to negotiate their practices and the meanings of actions. Finally, the joint enterprise element of communities of practice, which is a realisation of interpretive schema that communities' members use to define significance, shape practices, and react to a larger context, helps in developing and maintaining an agreed-upon set of terminology, codes and narratives. Such a set is used by communities' members in everyday work conversations and is used to generate the artefacts that enact their shared knowledge.

Social capital conditions the interaction with communities of practice (arrow d in Figure 2): The firm's social capital is the set of relationship-based resources available to the organisational actors (individuals and groups) that enables them to create and share knowledge. As discussed in the third section Nahapiet and Ghoshal (Nahapiet and Ghoshal 1998) suggest that social capital can be viewed across three interrelated dimensions: the structural, the cognitive, and the relational. The structural dimension refers to the overall pattern of connections, which enable organisational actors, individuals and group, to identify other actors with potential resources that they may not have at their own disposal. Therefore, the structural dimension of social capital will affect the visibility of communities of practice to other organisational actors.

The relational dimension of social capital described by Nahapiet and Ghoshal (Nahapiet and Ghoshal 1998), p. 244) is the result of a history of interactions organisational actors and can be described in terms of respect, trust and trustworthiness, norms and sanctions, obligations and expectations, and identity and identification. Therefore, it affects the recognisability of communities of practice as credible sources of knowledge.

Social capital's third dimension according to Nahapiet and Ghoshal (Nahapiet and Ghoshal 1998) p. 244), the cognitive dimension, includes those resources that provide shared representations, interpretations, and systems of meaning among organisational actors, individuals or groups such as shared language, codes, language, and narratives. These resources are the means through which organisational actors – once connected – can share each other's tacit knowledge (Polanyi, 1966). Therefore, this dimension affects the accessibility to the knowledge possessed by communities of practice.

5. Conclusion

The structuration model developed in this paper provides a theoretically grounded approach to closely explore the interaction between human action and social capital of the firm. According to this model such interaction is mediated through firm's communities of practice, which are conceptualised as the means for realising the different types of modality between social capital and human action. Such conceptualisation has several implications. First is the duality of firm's communities of practice, namely: they are both the medium and the outcome of collective human action (arrows "a" and "b" in Figure 2). As a medium they both facilitate and constrain the processes of creating, sharing and applying organisational knowledge. While the facilitating role of firm's communities of practice is recognised by many researchers (e.g., (Brown, J. and Duguid, P. 1991; Iverson and McPhee 2002; Wenger, Etienne 2000), their constraining role is not well addressed. For example, firm's communities of practice, by their very nature, specialise in specific areas of organisational knowledge. However, the application of knowledge to produce goods and services requires the bringing together many areas of specialised knowledge (Grant 1996). Therefore, the issue of how to integrate communities' specialised knowledge needs more investigation. For example, ontology-formulated topics can be used to distinguish between what different communities discuss and to support collaboration among them (O'Leary 1998).

Second, conceptualising firm's communities of practice as the means for realising the different types of modality between social capital and human action provides a fine-grained approach to study the impact of their elements, i.e., shared repertoire, mutual engagement and joint enterprise, on the structural, relational and cognitive dimensions of firm's social capital respectively (arrow "c" in Figure 2). For example, this approach is used to study the effect of national culture and computer-mediated communication on the relationship between social capital and communities of practice (Sinha and Abou-Zeid 2003). In conclusion, the structuration model of social capital and communities of practice shows the need for further research in two areas. First is the study of the constraining roles of firm's communities of practice in creating and sharing organisational tacit knowledge. Second is the study of social capital influences organisational members in their relation to communities of practice.

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