RETHINKING THE INTRA-ORGANIZATIONAL COORDINATION OF PRODUCTIVE KNOWLEDGE: FROM AN EPISTEMOLOGY OF POSSESSION TO AN EPISTEMOLOGY OF PRACTICE

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Abstract: The economic environment of firms is being increasingly impacted by a regime of competition based on continuous innovation and knowledge creation. Recent researches that studied the effects of these changes on the internal organization of the firm, have extensively questioned the traditional vision of knowledge. In this purpose, we argue for the necessity to go beyond the limitation of the organizational knowledge and to extend the traditional "epistemology of possession" into an "epistemology of practice".

Keywords: New organizational forms, intra-organizational coordination of knowledge, communities of practice.

1 Introduction

The economic and social environment of firms is undergoing radical changes mainly because of the consequences of the advent of new information and communication technologies (ICTs). These transformations translate into a gradual shift from productive logics to competition regimes that are increasingly based on intangible assets and dynamic resource creation. "Productive knowledge", in particular, tends to become the focal point of this new dynamic.

This poses serious problems to the "standard" theoretical frameworks in economics and management that have traditionally or assimilated productive knowledge to information or have considered it as a mere by-product of economic chains. More generally, the logic of "discovery" and "creation" have benefited only a tiny interest in standard approaches. The focus has been on the mechanisms of resource allocation, the type of information that allows individual agents to make decisions, and their ability to process this information. Knowledge has been reduced in this way to a simple phase in the linear process of information transformation: data information knowledge. More than knowledge itself, standard theories have generally considered knowledge-reduced-to-information (Amin & Cohendet, 2004).

The changes brought about by the advent of ICTs and a new knowledge-based economy, however, have opened a space for the emergence of new schools or the revival of old traditions that remained marginal during the period of descent. of standard orthodoxy. Many recent studies have thus examined the impact of these changes on the firm's internal organization and have particularly examined the notion of "knowledge" as the main input and output of the firm (for example, Fransman, 1994, Nonaka & Takeushi 1995, Cohendet & Llerena 1999). This work has largely called into question the classical view of knowledge as a mere stock resulting from the accumulation of information in a linear process, as well as the simplistic assumptions about the codifiability of knowledge and its limitation at the ontological level of knowledge. individual. A central idea that seems to emerge from all these works is the need to go beyond the limitation of organizational knowledge to an "epistemology of possession" to extend it to an "epistemology of practice", in the terms of Cook and Brown (1999).

Organizational knowledge is traditionally considered to be "possessed" by agents. The formation of new knowledge and the exchange and exploitation of existing knowledge are seen as processes triggered by learning mechanisms that are distinct from the possessed forms of knowledge. This vision of knowledge is necessarily reductive: it eliminates the subjective and contextual contingencies related to the knowledge provided by the practice. However, it is these idiosyncrasies and peculiarities that best reflect the value of productive knowledge (Hayek, 1945, Penrose, 1959, Bourdieu, 1980).

Taking into account the increase of the central role of productive knowledge as input and output of economic activity therefore requires a broadening of the framework of reflection on the coordination of productive knowledge from a logic of possession towards a logic of practice. It is about being able to report on a new competition regime where productive knowledge becomes increasingly dispersed within intra-organizational and inter-organizational knowledge networks around "best practices" on the market. Firms tend in this new configuration to forms described by Fransman (1994) as "knowledge processors" or "knowledge-creating firms" in the sense of Nonaka and Takeushi (1995).

We propose in this paper to explore these new forms of intra-organizational coordination of knowledge-en (inter) action and to highlight this situated perspective (for example, Lave & Wenger 1991, Brown and Duguid 1991). . This article proceeds as follows. The first section will be dedicated to a brief review of the classical conceptualization of knowledge. The second part will deal with the benefits of approaching knowledge in the light of an approach in terms of epistemology of practice. We then relate the theory of the firm to the theory of practice on the basis of the seminal work of Lev Vygotsky, Jean Piaget and Pierre Bourdieu. The idea is to develop and reinforce the concept of "knowledge-en (inter) action". The paper ultimately leads to the interest of the communities of practice firstly as an ideal context where knowledge can develop and learning can take place, and secondly as a focal unit on which any intra-organizational analysis of coordination (Wallon, 1959).

2 Classic Visions of Intra-Organizational Coordination of Knowledge

The "standard" vision of knowledge is that of accumulated stock from an information flow. A vision that presupposes, in accordance with the framework of rationalist epistemology, a strict separation between the subject and the object, and thus between knowledge and action (Walliser, 1998). In this standard framework, the intra-organizational coordination of knowledge corresponds to a linear process of transformation, which Winkin (1996) describes as a "telegraphic communication": the data are transformed into structured units of information that contribute to increasing the stock of knowledge and which in turn will be converted into "meta-knowledge" containing the beliefs and judgments of agents (Ancori et al., 2000). This vision sees the processing of information as a critical step in the formation of knowledge. More efficient will be the channels of data processing and information, the more information can circulate freely, and the more efficient will be the process of knowledge formation, considered as the ability to examine and evaluate different combinations of information. 'information.

Most of the economic and managerial uses of the concept of knowledge are largely based on such an interpretation. However, a growing number of voices are beginning to rise up against this overly simplistic vision and call for a paradigm shift.

The contribution of (Machlup,1980) is one of the first attempts to go beyond this restrictive view of the relationship between knowledge and information (Amin & Cohendet, 2004). Machlup shows that there is no cause-and-effect relationship between information and knowledge. An information unit can be added to an existing stock of knowledge, but it can also make no changes to it or cause it to completely reorganize: it all depends on the cognitive abilities of the agents and their ability to carry out learning processes. . According to Machlup, information is "fragmentary" and "transitory", while knowledge is "structured",

"coherent", and "of lasting significance". In addition, information is acquired by simple accumulation, while knowledge can be acquired from all kinds of expressions, observations or accidental impressions. Knowledge is built up as information is integrated and assimilated within a pre-existing knowledge framework that ensures its coherence and structuring.

The vision based on knowledge - developed recently by a whole set of research trends (strategy, evolutionary theory, industrial history, sciences of organizations) - no longer considers it as a mere aggregation of information. Knowledge is more considered as an embedded information system in a context (Granovetter, 1985) and subject to individual or organizational processes that make it meaningful (Weick, 1995) by allowing new and existing information to be interpreted an individual or organizational level to develop new knowledge (Daft & Weick, 1984).

To the vision of the firm as "information processor", privileged vision by the contractual theories of the firm (theory of the agency, theory of the rights of property, theory of the costs of transaction), where the cognitive dimension of the agents, their ability to process knowledge or their learning capacity is relegated to the background, these new approaches contrast a new vision of the firm as a "knowledge processor" (Fransman, 1994, Cohendet and Llerena, 1999). The assumption common to all these approaches is that the essential attribute of the firm is constituted by its "basic skills". The firm is essentially conceived as a place of acquisition, production and distribution of knowledge essential to the maintenance, enrichment and development of its core competencies.

In this vision, the coordination capacity of the "knowledge processor" firms is far superior to that of the markets. Compared to markets, firms are indeed considered as real "learning" economic entities, accumulating and using productive knowledge better than individual agents do, while markets do not have this power of accumulation of knowledge. but act only as intermediaries linking agents with idiosyncratic knowledge and expertise (Lundvall, 1992, see also Meeus et al, 1999).

Nevertheless, while Machlup's work has clearly demonstrated the relevance of the distinction between information and knowledge, a number of works, while recognizing this distinction, have striven to transform the notion of knowledge into its traditional conceptual categories. Thus, one way of assimilating knowledge to information in these works is the hypothesis of "codification" or deliberate conversion of knowledge into information. The idea here is that, in order to be treated as an economic good, knowledge must be put in a form that allows it to circulate, to be engaged and exchanged in commercial transactions. This conceptualization of the "codifiability" of all knowledge has allowed standard theorists to process knowledge-reduced-to-information through traditional economic tools. The argument most often put forward to justify this view is the fall in the cost of telecommunications which has facilitated the spread of codified knowledge by increasing the access, amplitude and speed of information systems.

But while these changes have undeniably increased the potential value of codified knowledge, there are, however, risks behind the assumption that all knowledge can be codified as information. On the one hand, the process of codification of knowledge and the nature of codified knowledge are much more complex phenomena than they are described in this work. On the other hand, "tacit knowledge" may be considered as a simple economic residue that can be codified (at a higher or lower cost). Codified knowledge can be transcribed in structured procedures. Transformed into information, this knowledge then becomes an easily stored input, introduced into expert systems, reproduced on media, or circulating through networks. While a tacit knowledge is mainly non verbalized, intuitive and not articulated, so hardly transferable.

As has been noted by many recent contributions, codified knowledge cannot be dissociated from a tacit knowledge that underlies it. In all knowledge co-exists tacit and explicit. Even an articulated knowledge is based on inarticulate basic elements, a set of features tacitly integrated by individuals. The tacit knowledge thus constitutes the background of all human activity and the social context of all learning. Their opaque, indeterminate and evolving nature gives them great flexibility synonymous with adaptability to change. Much of the organizational learning or technology is tacit, that is, embedded in routines and organizational processes.

The imperative of change is another serious limitation to this process of codification. The codification of knowledge is indeed a complex and expensive process, but the life of codified knowledge can be very short. It often takes a lot of investment to understand and exploit codified knowledge, which grows and becomes obsolete as the environment changes. The dynamics of knowledge are thus a continuous process of creative destruction.

Instead of this excessive tendency towards codification, the combination of tacit and codified knowledge should be thought of according to the context in which the agents or organizations operate this knowledge. This means in particular that there are certain contexts in which agents will be more willing to invest in codification, and others where they will be more inclined to consolidate their tacit knowledge. By highlighting the importance of context in analyzing the relationship between tacit and codified knowledge, (Polanyi,1962) has shown that what matters is the degree of attention of agents. This proposal is further verified in the new emerging economy characterized by the increased speed of codification and transmission of codified knowledge and the downward trend in their storage costs. In this context marked by the abundance rather than the scarcity of information, misinformation tends to drive out the right information and it becomes increasingly difficult for agents to distinguish the relevant information: cognitive attention rather than information. information becomes the scarce resource that must be saved (Piaget, 1974).

Finally, the standard view of the intra-organizational coordination of productive knowledge has also been widely questioned by authors for whom the processes of formation and use of productive knowledge strongly depend on the collective assets and the nature of the interactions in the organization. By explicitly introducing a multitude of heterogeneous agents into the training, circulation and exchange of knowledge, the focus is on the need and the need for interaction and communication between agents. Such a conception of the formation of knowledge requires the recognition of the cognitive properties of the individual and the role of socio-cognitive mechanisms at the interface of experience and practice (Polanyi, 1966: Favereau, 1989).

3 Exceed The Limitation of Knowledge To An Epistemology Of Possession

The separation between knowledge and practice thus represents a false dichotomy. The process that produces knowledge in the organization is not dissociable from the practice and contexts in which this knowledge is formed, acquired and appropriate, as well as the specificities of the actors that contribute to its creation. In other words, knowledge is not reduced to a "stock" that can be transferred from one context to another. Its use requires an effort of interpretation and translation (Callon, 1999) so as to always update and recreate it in relation to each new context (Tsoukas, 1996). There is therefore a feedback loop between knowledge and practice that poses significant intra-organizational coordination problems: while the first type of knowledge needs to be collected and integrated, the second type needs to be broadcast. Cook and Brown (1999) have identified the approach that focuses on the first type of knowledge (knowledge) as a "possession epistemology", while the second type of knowledge (knowing) corresponds to an "epistemology of practice".

In the practice-based vision, knowledge is conceptualized as an action that can not be extracted from the activity itself or even from the activity-related space that brings together the

organizational actors around a same practice and shapes individual and group behavior (Cook and Brown, 1999). Activity, which is the field of practice, is the source from which organizational skills emerge (Spender, 1996). Each time individuals reconstitute their knowledge in time and space, they also modify and adapt their knowledge as a result of any change in practice. Thus, they can develop capacities to improvise, innovate and develop new methods and mechanisms for interpreting the external context to their practices, which they end up internalizing. This is a main form of organizational learning.

The epistemology of practice is inserted as a theory on the rules of the organization of knowledge, as to their creation, diffusion, assimilation, coordination, etc. The representation of knowledge in organizational systems requires an epistemic analysis that can evaluate the qualities, capacities and effectiveness of such systems in the insertion of knowledge as a basic element of any organizational learning.

In an epistemology of practice, knowledge is distinguished from both action and behavior in that it primarily reflects the importance of coordinating the various activities carried out by both individuals and groups as actors. intra-organizational mindful of the organizational context in which their interactions take place. Continuous knowledge through practice consists mainly in apprehending, gathering contextual elements and giving meaning so that the culture of knowledge cannot be limited to the heart and structure of the knowledge itself but also refers to the different paths leading to to this same knowledge.

Only an epistemology of practice can therefore provide us with answers to the problems of intra-organizational coordination of productive knowledge, especially when it comes to understanding the problem of coordination of knowledge acquired at the individual level and the possibility of extending it. and integrate into the collective process of organizational learning. An epistemology of practice allows in this way to reduce the friction that can emanate from the juxtaposition between individual and group within the organization. Practice epistemology also has the advantage of distinguishing practice from action and behavior. The resulting knowledge of the practice is in fact the epistemological dimension of the action that Cook and Brown (1999) define not as something that is used during action or even necessary for action but rather as a part of the action and the practice, until ultimately making it a concrete and relational dynamic.

Such a perspective thus reveals the dynamic and evolving nature of productive knowledge within the organization that (Blackler 2002, p.58) summarizes through four characteristics: (i) This knowledge is mediated: manifested in systems of technology, collaboration and control; (ii) They are: localized in a time and space specific to particular contexts; (iii) They are temporary: constantly built and developed; (iv) They are pragmatic: deliberate and directed toward an object.

Rather than the behaviorist track, it is the constructivist theories that best capture this dynamic and evolving nature of productive knowledge. We will refer here to the founding works of the theory of practice by Lev Vygotsky, Jean Piaget and Pierre Bourdieu. Constructivist theories refute the behaviourist approach to learning in that knowledge is not built up from the "outside" of the learning agent by association of experiences, but primarily within the "inside" of the agent. by interacting stimuli of the environment with his schemas and representations. In the constructivist vision, reality does not exist independently of mental activity. Each builds his own interpretations. Constructivism thus recognizes the legitimacy of the existence of multiple perspectives of interpretation.

4 The Theories of Practice And Learning

4.1 The constructivism of Piaget

Piaget's cognitive approach to learning emphasizes the cognitive processes of the learner, in contrast to the behaviorist model that sees the learner as a mere "container" that responds to environmental stimuli through construction of routines and automatisms. Piaget emphasizes the active participation of the learning agent in the learning process.

For Piaget, the stage of conceptualization in the learning agent is of paramount importance. This stage consists of a passage of the action to the symbolic representation of this action. This is where it involves cognitive processes because this passage requires the agent to re-elaborate the action plan in terms of symbolic and written representation. It is not therefore a simple "association" of action to representation as in the behaviorist approach, but rather a subjective "construction" of knowledge through several stages of development that reflect a process of a dual adaptation:

- "accommodation" which translates an integration of a new knowledge resulting from the situation into a pre-existing operational schema of a type of conduct. This process of accommodation makes it possible to adjust the behavior to a new situation.
- "assimilation" which is the transformation that the agent will be able to print schemas and cognitive structures in order to adapt to an unresolved situation and which goes through an imbalance.

The equilibration of these processes leads to higher stages of structuring. Learning is thus gradually realized according to the stimuli generated by the environment and the encounter and the progressive resolution of conflicts between different schemes. A schema does not refer to an identical repetition but rather allows to face a variety of situations.

It is therefore essential to become aware of the integration of the representations that the agent develops and acquires by representing the knowledge of a specific field. In other words, the problem should be articulated around the transposition of stimuli into representations to finally arrive at a representation of knowledge in a system.

4.2 The social constructivism of Vygotsky

Compared to the constructivist perspective of Piaget, learning in the socio-constructivist perspective takes place in a social environment including all kinds of "mediations". The integration of the social dimension in learning marks the transition from a two-dimensional model to a three-dimensional model of learning integrating "mediation". This perspective is largely in line with the founding works of Lev Vygotsky.

Vygotsky's approach to knowledge is deliberately rooted in an epistemology of practice: knowledge emerges in and through practice: "[t] he primary form of intellectual activity is active, practical, reality-oriented thinking and representing one of the fundamental forms of adaptation to the new conditions, to the changing situations of the external environment. (Vygotsky, 1997, 84).

Knowledge is thus constructed according to Vygotsky first in the action before being internalized. It's a knowledge-in-action. This testifies to the primacy of the epistemology of practice in relation to the epistemology of possession: we do things (opus operatum) before knowing how to do them (modus operandi). This discrepancy between what the agents know and what they know how to do, that is to say the difference between the internalized performance of the agents and their performance in a situation of action, results in a distance, always emerging, between what agents are and what they want to be. This is what Vygotsky defines as a "Proximal Zone of Development", where he believes

the best learning opportunities lie. In other words, the learning interaction is most active when the learner is cognitively ready, i.e. located in a potential development zone. This vision suggests that learning, situated and contingent, cannot be decreed ex ante. It is the interaction (including the structure of the interaction) and the cooperation that promotes the actualization and construction of knowledge. The concept of the Proximal Zone of Development illuminates in this way the relationship between development and learning: learning precedes (little) development. The proximal area of development lies between the level of problem solving with mediation and the level of unmediated resolution. Vygotsky's approach is thus opposed to Piaget's static conception of developmental stages.

This approach recognizes the indispensable role of mediation in learning and knowledge transfer processes. From this perspective, any process of learning as a relation of the learning subject to an object is never a direct and immediate relation of apprehension of the real. Thus, a cognitive process of objectification is established through a mediating system between a subject and an object of knowledge. A learning process, as a process of objectification, is not simply an appropriation, but above all a mediated construction of an object. The rise of ICT thus marks great potential for learning in terms of the multiplication of "mediatized situations" conducive to learning.

5 Schemes and Habitus at Bourdieu

Bourdieu's vision is quite similar to that of Vygotsky. At Bourdieu also we find the idea that knowledge must be understood not only as an opus operatum, that is to say a finished product, a "objectified product", but also and above all as modus operandi, a mode of production, "an incorporated product of historical practice, structures and habitus" (Bourdieu, 1980: 88). Knowledge thus appears as a dynamic grammar that guides the practice of each agent: "The reflective explanation converts a practical succession into a represented succession, an action oriented in relation to an objectively constituted space as a structure of requirements (the" things to be done ") In reversible operation, performed in a continuous and homogeneous space. This inevitable transformation is inscribed in the fact that the agents cannot adequately control the modus operandi that allows them to generate properly formed ritual practices by practically making it work, in situation, and by reference to practical functions "(Bourdieu 1980: 152).

The idea of the economy of attention, through the activation of the routine action, is here a central idea: the agent can only adequately control the modus operandi by internalizing a part of this mode of operation and by making it spontaneous, a habitus. This internalization, says Bourdieu, is necessarily embedded in a situation: only a stimulus emanating from this situation can trigger the spontaneous action that is necessary (or the feint in the words of Bourdieu): "There are acts that a habitus will never produce if it does not meet the situation in which it could actualize its potentialities: we know, for example, that the extreme situations of times of crisis give some the opportunity to reveal potentialities unknown to themselves and others "(Bourdieu, 1980: 154f). The idea of the operating mode refers to the foundation of a practice in relation to a cognitive effort, therefore a cognitive capacity, of an attention that must be saved, less because of a general principle of rational calculation applicable by the repetitiveness of work only because of the "logic of practice" (Ibid., 154).

The habitus is thus a kind of practical hypothesis based on past experience, a sort of historically constructed program, an interiorization of externality (Bourdieu joins Piaget here on a certain level). Through this system of dispositions, the past survives in the present and tends to be perpetuated in the future by updating itself in practices structured according to an internal law through which the law of external necessities irreducible to the constraints is continuously exercised. immediate conditions (Bourdieu, 1972). But if the habitus consecrates the preponderance of internal dispositions related to a practice, it does not refer to any determinism. It even recognizes an infinite capacity to engender freely (albeit relatively limited) perceptions, thoughts, actions that always have as limitations the historically and socially situated conditions of its production (Bourdieu, 1980). In fact, the determinism of the socio-economic field and the habitus operates only through the unconsciousness of the agent through a form of self-determination which becomes an accomplice to the unconscious action of the provisions. (Bourdieu, 1992). In this sense, the habitus stands out from the habit that, far from being mechanical or automatic, it is capable of generating an infinity of discourses and practices.

More precisely, the notion of habitus aims at evading both the objectivism of the action heard as an agentless mechanical reaction and the subjectivism that describes action as the deliberate fulfillment of a conscious intention positing its own ends. and maximizing its utility by rational calculation (Bourdieu, 1992). This "conditioned" and "conditional" freedom that it ensures thus distances it from the simple mechanical reproduction of the initial conditioning. It legitimizes, however, the existence of a field of possibilities composed of reasonable behaviors, of common sense compatible with the conditions of habitus production objectively adjusted to the logic characteristic of a given field (Bourdieu, 1980: 94). The theory of habitus does not eliminate the strategic choices of agents. Rather, as a place of historical mediation of the internalization of the objective conditions of the social field and of the condition of individual practices, habitus tends to reproduce the structures from which it is produced (Bourdieu, 1979: 191). Habitus, as a set of internalized schemas and representations, thus enables agents to mobilize knowledge, methods, information, rules to cope with a situation, because this mobilization requires a series of mental operations (Schuler, 1996).

As with Vygotsky, the contribution of the external social environment is therefore essential to accompany the learning agent in his learning activity as long as it provides him with solutions to share his knowledge with others during his shared activity i.e. through social interaction, collaboration and cooperation. According to Lave and Wenger (1991), participation in an environment using certain methods constitutes learning. The learning context is also very important in a mediation tool. The approach considered here is that of "situated learning" that takes shape mainly within "communities of practice".

6 Communities of Practice And Intra-Organizational Coordination Of Productive Knowledge

Learning can thus be defined as a continuous process of reorganization and reconstruction of experiences and expertise. It is therefore a process that takes place in all situations where agents who face problems and situations of "uncertainty" act and interact. Ultimately, it is the "practice" in these situations of uncertainty that is a source of construction of knowledge. This practice and problem-solving procedures, however, are still based on the experience accumulated by the learning agents.

From the foregoing, it emerges that productive knowledge has two main distinguishing features with respect to information: (i) On the one hand, it mobilizes cognitive abilities, and mainly background capabilities. In contrast to information, it grows to a large extent beyond the reach of deliberation; (ii) On the other hand, it is embedded in practice. The rationality of the agents is thus strongly located, programmed by the practice. By these two dimensions, which are connected, organizational knowledge intrinsically has a propensity for its autonomous development.

Productive knowledge, as a social construct born of individual interactions, can thus be considered as a social process, an emerging flow of individual interactions. Any interacting individual is in fact subject to a process of habituation through which norms and rules become invisible to him, internalized, which presents considerable advantages on the one hand in terms of reducing the complexity of the environment and on the other

hand in terms of attention savings. This process is based on a self-reinforcing logic, particularly through the imitation mechanism.

In contrast to the view of knowledge as "possessed" by individuals, productive knowledge is often of a social nature. The separation between cognition and practice is thus replaced by a continuum between the act of knowing and the act of acting. An epistemology of practice, still unexplored in economics, thus seems more capable of restoring the complex models of economic activity. This framework of analysis clearly suggests that the appropriate unit for the analysis of knowledge formation embedded in practice should not be individuals or organizations, but rather distributed systems of activity, such as communities. Learning is viewed in an organizational setting as situated and related to organizational action and communities of practice.

Many seminal contributions in the 1990s have thus highlighted the fact that a growing share of learning and knowledge creation is the result of informal collective action. Consequently, not only does learning always have a social dimension, but it also manifests itself mainly in the social interactions of agents engaged in a common practice. Any action must therefore be understood according to its context. Knowledge is no longer seen as the property of individual agents, but as being distributed and embedded through social systems, taking place primarily at the intermediate organizational scale of "communities of practice".

A new understanding of intra-organizational coordination in terms of "epistemology of practice" highlights the central role of communities of practice within organizations. It is important to distinguish this notion from the traditional hierarchical groups in the organization (functional groups, and project teams in particular), where group membership is regulated by the hierarchy. Functional groups are relatively homogeneous and consist of agents sharing the same disciplinary specialization (finance, mechanical engineering, etc.) under the hierarchical responsibility of a department head or a functional manager. While such units may participate in knowledge creation processes, they are limited by the considerable effort required to establish and continuously improve standards of behavior. While communities are places of active and deliberate learning, functional groups are essentially places of passive learning, such as learning-by-doing. The project teams are more heterogeneous and rely on the desire to operate a disciplinary cross, but they are also placed under a hierarchical authority (the project manager), in order to achieve a specific objective in a limited time. There are similarities between teams and communities, for example through the existence of common interests of individuals, but the role of hierarchy and the time constraint are two strong distinctive elements between the two entities. There may also be coalitions in the organizations (resulting from strategic calculations by the agents) and cliques (as defined by the theory of networks).

In contrast to all these collective entities within the organizations, the communities of practice do not have precise boundaries and do not belong to any explicit hierarchy that would be able to control the respect of procedures or the quality of the work provided. They integrate strong links between their members. These links are based on the passion and commitment of each member to a common practice. The concepts of contract and incentive pay are secondary, if not totally absent. Interactions between members of a community are rather governed by relationships of trust based on the respect of norms (partly community-specific). What we consider in this work, therefore, are true autonomous communities based on a principle of voluntary membership of agents based on the sharing of a certain number of values, standards or common interests. This voluntary membership is accompanied by the sharing of a cognitive interest or a common practice.

The representation of the firm as a community of knowledge intensive communities is proposed here as part of a knowledge-based economy as a complement to traditional hierarchical structures. As the knowledge-based economy develops, firms appear to be more like assemblages of interconnected communities than as formal structures.

A central economic feature of the Autonomous Communities is that they are based on a principle of voluntary cooperation (trust not strategically calculated, intrinsic motivation, etc.) and consist of agents that interact through a non-hierarchical communication architecture. They are thus able to take charge of the "sunk costs" related to the processes of generation or accumulation of knowledge. These include, for example, the costs of progressive construction of languages and of action or interpretation models necessary for the implementation of new knowledge and which are not supported by the traditional mechanisms of the hierarchy. Thus we suggest that communities can in some cases compensate for the failings of the hierarchy in companies that face the need to innovate and continually produce or assimilate new knowledge.

Through regular interactions among members of a community that is the infrastructure that supports situated learning, communities become repositories of knowledge that are embedded in their daily practices and habits. The learning pattern adopted by a community (e.g. learning by circulation of "best practices") is one of the determinants of knowledge accumulation within the community. In addition, in most cases, the flow of knowledge is by means of a local language (code) specific to the community. As Wenger (1998) points out, a community based on interaction and participation is a "locally negotiated jurisdictional system".

Specifically, over time, engagement in a common practice creates "directories" shared by community members: routines, jargons, procedures, stories, gestures, symbols etc. but also physical media, such as prototypes or mock-ups. These shared repertoires, created (or adopted) by the community during its existence, become gradually part of its practice. They should not be understood as consensual bases, but rather as resources that can be mobilized for the negotiation of meaning in interaction situations. Organizational learning is not natural: it needs the tensions created or injected to trigger. Collective learning in this vision occurs in organizational practices as agents negotiate or renegotiate common repertoires or common bases of knowledge. It is thus largely located (Steinmueller, 2000).

7 Conclusion

In this contribution, we have developed a pragmatic vision of learning and coordination of organizational knowledge: a vision that looks at processes and contexts of knowledge creation and dissemination and perceives organizational performance through the observation of practices. in work situations. If there is a common point between all forms of knowledge is that they all try to answer a questioning. Knowledge thus acquires a productive aspect (Wanda, 2002) in the sense that the activity of knowing is only a deliberate, though often unconscious, search for what one wishes to acquire for the purpose. to do what we wish to do. From this aspect, we join the idea of "proximal zone of development" as defined by Vygotsky. Knowledge is therefore defined as a process of social fulfillment, constituted and reconstituted every day and at any time through practice: knowledge cannot be stable or permanent but subject to continual and dynamic change. Communities of practice are thus an ideal place where the members of an organization are most successful at learning, because the knowledge of the place or context or situation from which it emerges can no longer be separated. nor the practice that generates it and of which it is a fully integrated part. Activity, which is the field of practice, is the source from which organizational skills emerge (Spender, 1996: 58).

One of the advantages of this analysis is that in a given community, learning is confused with practice because of the nature and structure of the practice itself. The introduction of the community as a unit of analysis thus makes it possible to remedy the false classical separation in economics between knowledge and practice. The process that produces knowledge in the organization is not separable from the practice and contexts in

which that knowledge is formed, acquired and appropriate. And adopting the idea that knowledge creation is realized mainly in contexts of action, and that the action is always collective, the consideration of the intermediate level of communities is therefore necessary to focus on learning in processes of development. 'action.

Economic activity in a given community is driven by the members' understanding of the purpose of that activity. Language and communication, presiding over individual interpretations and authorizing the inaction of collective actions, play a key role in this community dynamic. In this way, a major advantage of the community over traditional modes of coordination is that, as the implementation of knowledge is based on the existence of shared language and representations, the accumulation and Knowledge processing occurs naturally within a given community, without an absolute necessity to resort to powerful incentive mechanisms. The validation of the knowledge is done in first analysis within a given community. In the same way, the interpretation of the knowledge provided by the outside world (notably by the hierarchy) is examined, criticized and reprocessed (to give rise sometimes to creative adaptations) within the communities. Moreover, the preservation of routines, their power of replication and their continuous improvement are all the more likely to be realized that they take place within given communities. The development of diverse communities thus corresponds to a progressive division of knowledge creation tasks, each community specializing in a new piece of knowledge and thus bearing the fixed cost of the progressive construction of languages and action models. and interpretation.

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