

Chapter 3

Solo Entrepreneur vs. Entrepreneurial Teams: Structural/Cultural Embeddedness and Innovation

3.1 Introduction

This chapter shines a light on the dynamic interaction between creative behavior and preexisting structuring of organizations in cross-cultural knowledge management.

Within social systems where human actions are influenced by existing structures, those actions are performed in a structural manner. Such influence is fundamentally accomplished in two ways, which coincide with the fields of cognitive and behavioral learning.

In the former case, identification and absorption of new knowledge may be constricted by preexisting mental frames. In the latter case, the concept of structuration is evident in its opposition to applying new ideas to existing organizational practices and routines. Action is a necessary element of the learning process, while structure strengthens and propagates the advantages arising from the learning that is gained.

To give sense to both, the organizational learning process may have to be arranged as a process of punctuated equilibrium that varies from emphasizing action and emphasizing structural consolidation.

There is an actual risk of excessively perceiving the relations between actors and structures on the base of the functioning of information-processing, without taking account of the symbolic characteristics associated to information, because of the realized effects it has for the position occupied by individuals within the organizational structures and within their broader communities. Thus, information is important for organizational learning not only for its literal meaning, but also for its origin and the way its social consequences are understood.

Existing proofs about the propagation of innovation and its adoption within organizations reduce their utility for evaluating the effects deriving from the way the microlevel setting of entrepreneurs, in its structural and cultural aspects, encourages their inclination to drift away from preset ways of thinking or acting and stimulates the implementation of new innovations.

This chapter illustrates how different abilities for creative action are generated by the interplay of structural characteristics of the entrepreneurial team, which can be defined as aspects of an individual's relational environment, with characteristics of the entrepreneurs' cultural embeddedness, that is the background of work and educational relationships.

3.2 Team Structure and Creative Action

Innovation, similar to learning, is an organizational property, and, in both cases, a fundamental issue concerns how they may be supported. Mentalities and embedded interests may reinforce the barriers to organizational learning. The features and the effects of social embeddedness deserve more consideration. There are various and elaborate outlines of embeddedness, founded, for example, on ideological boundaries.¹

When highlighting this concept, it can be asserted that the entrepreneurs' tendency to innovate, instead of repeating preexisting ideas, depends on the kinds of social relationships those entrepreneurs are embedded within. A structural examination prefiguring creative action demands that the standard vision of embeddedness be adjusted.²

Scholars, like Popper (1959), have argued that the processing of innovation and discovery frequently leads to the conclusion that new combinations of ideas should be considered as mainly random events that occur among solitary actors and should be handled in a peculiar way; nevertheless, this point of view does not take account of the relevance of embeddedness in activating combinations of ideas.

In the traditional definition of entrepreneurship, the entrepreneur is generally viewed as an individual. The role of academic and government initiatives in the establishment of a firm is covered up by the ideological myth represented by the idea of the heroic individual entrepreneur. New firms and other organizations may be created by many people that collectively assume entrepreneurial roles. Actually, even if some people do not want or cannot manage to become entrepreneurs individually, they are able to do so in group, as occurred in the case of a cooperation between Swedish computer advisers and business school graduates who established an Internet company (Etzkowitz 2002).

¹Structuration theory views the subjectivity and objectivity of social realities as equally important. According to structuration theory, cultural context is generated and regenerated through the interplay of action and structure. It recognizes that "man actively shapes the world he lives in at the same time as it shapes him" (Giddens 1986).

²Structuration theory and the concept of the duality of structure allow us to think about society from both a structural and a behavioral perspective without reducing the analysis to either the institutional level or to the level of everyday life (behavioral). It allows us to do our analysis on one level while we set aside the other level. It allows us to see how the two levels are connected both in theory and in social reality. Finally, it allows us to appreciate the fact that the individual actors and social groups are not simply products of their social circumstances, but they are also the producers and reproducers of these social relations and circumstances.

While the classical economic models regard in a favorable way the idea of the solo entrepreneur,³ more recent studies, such as the one by Stewart (1989), have replaced that concept by realizing that many times innovation is carried out by entrepreneurial teams. From this viewpoint, team structure could be considered one of the most meaningful elements to predict the firm's proclivity to innovate. If a certain number of entrepreneurs decide to work together and analyze a single problem in all its various perspectives, new combinations of ideas are stimulated.

On the contrary, it is more plausible that solo entrepreneurs repeat well-known routines derived from their personal history. Moreover, within team structure, creativity of action is probably strongly affected by the variety of functional roles held by the different entrepreneurs. There is a higher chance that new combinations of ideas are triggered by a team formed by entrepreneurs with various specialized backgrounds rather than a team whose members have been trained only in one specific field. As argued by Burt (1992), the fact that entrepreneurs do not hold the same roles is quite as significant in acquiring necessary information as avoiding cohesive bonds. Thus, the variety of role structures demanded by individuals or entrepreneurial teams may fundamentally determine diversions from the habitual practice. It is also important to underline that proclivity to innovate implies that entrepreneurs are not captured by the conformity that could be stimulated by social embeddedness.

The theoretical advantages of entrepreneurial groups regarding information acquisition have to be also assessed by taking into account the fact that such teams can require conformity from their members. At the start, entrepreneurial team members usually have limited intimacy with one another, but as the new organization takes shape, common interplay makes the ties within the group stronger. As pointed out by Blanck (1993), who thoroughly analyzed interpersonal expectations, creative experimentation can be significantly hindered by the concern for the views of others. Therefore, the insistence for conformity in the innovation process is likely to increase and mostly eclipse the advantage that, at the beginning, creative activity receives from anonymity.

The traps of conformity may be avoided if entrepreneurs extend their network and reach a diversified number of social connections, and if they prefer to stress the importance of abstract conceptions of ideas rather than their actual execution.

3.3 Cultural Predictors and Organizational Innovation

As highlighted by Granovetter (1985), if it is true that "oversocialization" is hostile to innovation, from an empirical point of view it is also necessary to take into account the internalization of norms and ideas in anticipating the ability to act in a creative manner. Under different aspects, both the cultural and the structural embeddedness of entrepreneurs seem to be relevant to their innovative inclinations.

³As Schumpeter pointed out, "...the entrepreneurial function need not be embodied in a physical person and in particular in a single physical person" (Schumpeter 1949, p. 255).

Cultural embeddedness expresses the quantity of experience held by actors in a specific task field, the degree to which they admittedly gather ideas from that experience, and if the experience refers to the habitual practice and skills or includes attempts to divert from common routines. Vast experience in an industry may lead entrepreneurial teams to be less creative, while limited experience is more likely to produce innovation.

Discussing about organizational innovation, Aldrich and Kenworthy (1999: 20) stated that the “indifference to industry routines and norms gives an outsider the freedom to break free of the cognitive constraints on incumbent.” Furthermore, as actors gain more experience in an industry, their performance appears to be more foreseeable and trustworthy. As pointed out by Hannan and Freeman (1984), these distinctive aspects of performance are commonly appreciated by society, but, as argued by March (1991), they can also hinder entrepreneurial exploration. As highlighted by Sewell (1992), the unpredictability of performance, particularly by the side of entrepreneurs without experience, is a crucial factor to prefigure creative action, because it leads to the review of conventional cultural patterns.

As this statement is applied to teams formed by a certain number of members, there appears to be a problem, inasmuch as the degree of innovation may be affected by the dispersion of the entrepreneurs’ industry experience. If cohort effects are decisive, innovation rates will consequently result from whether team members accessed the industry almost simultaneously or separately.

Hence, when an organization is trying to stimulate learning behavior, designing the right organizational context for teams is of the utmost importance. Teams are implemented in organizations because they are thought to be an effective way to cope with the uncertainty created by the environment (Guzzo 1995). Some argue that strategic change and continuous organizational adaptation emerge from an organization at the team level, especially in fast-changing environments (e.g., Burgelman 1994; Brown and Eisenhardt 1997).⁴ Consequently, it is of critical importance to understand how novel ideas come to light in teams and organizations and what fosters their creation.⁵

⁴Shane (2000) pointed out that the same licensable invention was exploited by eight different teams. Training and expertise were distinguishing elements for the members of every team. The consequence was that everyone perceived in a different way the possible exploitation of the licensable invention and carried out extremely different innovations despite having the same basis. It is not a surprise that they were not all as successful as their promoters had imagined. In such example, simple teams are taken into account: their routines could be associated with individuals. The different training and experience of the various members of the teams generated different routines and this led to the development of different innovations starting from the same technology. In the same way, the integration of different scientific and technical disciplines was made easier by the internal governance structure. For example, in Hounshell’s and Smith’s thorough account of DuPont’s research laboratories, DuPont’s interaction with external partners or cooperators is only just mentioned. Nevertheless, there is a significant evidence of interdisciplinary integration, such as the one between engineering and chemistry.

⁵This also enables us to make a contribution to the literature on organizational design (Ancona and Caldwell 1992). Sociotechnical systems theorists (e.g., Trist 1981; Beekun 1989) have long argued for the use of teams as building blocks of flexible and creative organizations and have described and experimented with different organizational designs to optimize the effectiveness of these teams.

3.4 Scientific Knowledge Production as a Cultural Practice

Researchers are progressively realizing that scientific production is shaped by the institutional and organizational context. The ideas of sociologists of science, like Robert Merton (1973), have influenced the common feeling of how scientific knowledge is created. Merton asserted that the production of scientific knowledge occurs within a number of institutions that sustain the scientist as an autonomous viewer of the world.

The establishment of cooperative and integrated research communities structured around new scientific fields, where scientists have the opportunity to absorb the progresses made in various disciplines, has been frequently mentioned as a fundamental asset to the creation of some of the most innovative academic research organizations in the world (de Chadarevian 2002; Hollingsworth and Hollingsworth 2000).

However, scientists are coincidentally embedded within a wider social setting of their colleagues within and around their disciplinary and problem center of attention. Crane (1968, 1972) was the first to identify the so-called “invisible colleges” that are based on interpersonal relationships constructed on common interests, exchange of students, and interaction during conferences. Thanks to such broad social structure within the scientific community, a scientist can benefit from a cosmopolitan network of colleagues and contacts. As pointed out by Merton (1973), these people may be much more than close individuals external to the scientist’s discipline and may have a lot to share with him.

As highlighted by Vacanti and Mikos (1999), in the case of regenerative medicine, for instance, these cosmopolitan networks encompass both the main discipline in which the scientist has been trained and other disciplines indirectly related to it. To remain in the example, chemical engineers have a cosmopolitan network of polymer specialists inside and outside the USA and such network also connects disciplines, such as biomechanical engineering and cell biology.

Nevertheless, these research contexts and integrative abilities are not usually easy to follow inside universities, because of the way the latter are organized.

One significant barrier is the particular importance assigned to personal achievements in gaining appraisal within the scientific community and making career progressions at university. This does not encourage scientists to create cooperative relationships while they perform their researches.

Another significant barrier to the establishment of cooperative relationships among scientists within the university environment is constituted by the disciplinary divisions that characterize the organization of science within universities. Here, every research community generally works independently from the others, with its own departments, programs, journals, and professional associations, safeguarding their own distinctive rules and norms concerning what good science is founded on. The development of cooperative attempts among scientists from different disciplines is considerably set back by these institutional barriers to collaboration,

although the latter would play an active role to overcome many research issues, in particular, those in new fields that go beyond the boundaries that separate a discipline from another.

The fact that academic researchers are not sufficiently stimulated to actively collaborate with their colleagues from other disciplines is useful to basically understand why firms have appeared to have great success in facing and solving organizationally elaborate, but truly evident research enigmas, in particular, those that go beyond interdisciplinary divisions and demand a combined and integrated research effort in which a group of scientists⁶ from different disciplines has to be involved.

“...we see organizations as having a critical role to play in structuring fragmented practice. To fully play that role, organizations need to recognize that they are not coherent wholes battling the incoherence of the world around them. Divisions of knowledge, understanding, worldview and practice fall within them, too. They must thus take advantage of their own incoherence. That advantage comes from having a privileged view on the various practices within and the possibilities and potential for weaving these together into complementary innovations – of products, processes or practices” (Brown and Duguid 2001:58).

Over the years, economics of science has become a fully developed field of study, as a process of recombinant growth has taken place utilizing a considerable set of tools and methodologies from the typical research traditions of a wide range of fields of economic analysis. Once again the importance of the processes of recombinant growth that describe creative initiatives is confirmed. In the light of the different views of investigation, the first contributions to the economics of science tend to consider the individual researcher as the subject of investigation, while the organization of science does not receive similar attention at the institutional level, both publicly and privately. Even less consideration has been gained by the interaction between the individual researcher, with all his motivations and rewards, and the institution (department, school, or central administration) of which he is part (Antonelli et al. 2011).

3.5 Transcending Internal Cultural Boundaries

All organizations, except very small-sized ones, generally tend to set internal boundaries, by creating various specialized groups or departments, each of which has its own knowledge and skills. Nevertheless, as stated by Lawrence and Lorsch (1967), intraorganizational specialization seems to foster a “*difference in cognitive and emotional orientation among managers in different functional departments.*”

⁶The creation of scientific knowledge is a cultural practice. In fact, as argued by Lenoir (1995), knowledge implies productive commitments with the world and the social and economic interests of the parties involved. Therefore, for a complete comprehension of the processes of knowledge creation, which influence knowledge paths, it is essential that the cultural practice of scientists in firms is fully understood.

In fact, specialized groups link their knowledge to their expertise and express it by using their own codes and language, in which their social identity is reflected.⁷ Such identity is reinforced by an external institutional base. Thus, it can be arduous to connect one internal boundary to another and bring together the contributions of every single group to organizational learning, owing to opposition in the technologies provided and the objectives related to the process.

However, organizations need to avail themselves of the knowledge and skills of the various specialized groups that work within them, so they can take advantage of their vital ideas and contributions, which are necessary for organizational learning. As argued by Herriot et al. (1985), who introduced the concept of “*ecology of learning*,” in cases in which there is interdependence between the actors’ experiences, the results achieved by one actor do not only rely on his skills and actions, but also on what the others actually do. Thus, for organizational learning to be effective there has to be an adequate balance between differentiation and integration, which depends on various elements, such as the level of intricacy, the degree of change, and the competitive strain within the organizational setting. As pointed out by Lawrence and Lorsch (1967), organizations that made a high performance were those in which the above-discussed balance had been consistently achieved.

The importance of differentiation and integration for organizational learning has been thoroughly analyzed by Mary Parker Follett. The scholar highlighted the fact

⁷Social identity is “that part of an individual’s self-concept which derives from his knowledge of his membership in a social group (or groups) together with the value and emotional significance attached to that membership” (Tajfel 1981, p. 255). Social Identity Theory was developed by Tajfel and Turner in 1979. The theory was originally developed to understand the psychological basis of intergroup discrimination. Tajfel et al. (1971) attempted to identify the *minimal* conditions that would lead members of one group to discriminate in favor of the ingroup to which they belonged and against another outgroup. In the Social Identity Theory, a person has not one, “personal self,” but rather several selves that correspond to widening circles of group membership. Different social contexts may trigger an individual to think, feel, and act on basis of his personal, family, or national “level of self” (Turner et al. 1987). Apart from the “level of self,” an individual has multiple “social identities.” Social identity is the individual’s self-concept derived from perceived membership of social groups (Hogg and Vaughan 2002). In other words, it is an individual-based perception of what defines the “us” associated with any *internalized group membership*. This can be distinguished from the notion of personal identity, which refers to self-knowledge that derives from the individual’s unique attributes. Social Identity Theory asserts that group membership creates ingroup/self-categorization and enhancement in ways that favor the ingroup at the expense of the outgroup. The examples (minimal group studies) of Turner and Tajfel (1986) showed that the mere act of individuals *categorizing themselves* as group members was sufficient to lead them to display ingroup favoritism. After being categorized of a group membership, individuals seek to achieve positive self-esteem by positively differentiating their ingroup from a comparison outgroup on some valued dimension. This quest for *positive distinctiveness* means that people’s sense of who they are is defined in terms of “we” rather than “I.” Tajfel and Turner (1979) identify three variables whose contribution to the emergence of ingroup favoritism is particularly important. (1) The extent to which individuals identify with an ingroup to internalize that group membership as an aspect of their self-concept. (2) The extent to which the prevailing context provides ground for comparison between groups. (3) The perceived relevance of the comparison group, which itself will be shaped by the relative and absolute status of the ingroup. Individuals are likely to display favoritism when an ingroup is central to their self-definition and a given comparison is meaningful or the outcome is contestable.

that contrasts exist within organizations and should not be hidden, but exposed. People should not escape conflict, but deal with it, because it is the rightful manifestation of divergent ideas. Besides, progress would not occur if there weren't any differences of thought and opinion. Therefore, the learning process should be enhanced, if people from different backgrounds, who are specialized in different operational roles, are involved. The basic problem is the solution of the contrasts that arise among these people and how they can be addressed in a positive way for the organization. According to Follett, integration is the key, because it aims at finding a balanced solution that includes everybody's view and gives an answer to all demands. The most favorable way to manage intraorganizational conflict is to direct it toward collective learning and creation of knowledge. If reachable, a solution embracing collective learning may be enhanced by the set of specialties within the organization and may even be of assistance in linking together internal boundaries, since every actor involved can benefit from it, because of its mutual appeal.

Other scholars have also described the positive role of intraorganizational conflict. Coser (1964), for instance, stated that conflict is advantageous when it arises within an integrative context, in which the group's energies may be augmented by internal contrasts. Lawrence and Lorsch (1967) often alternated the term "*conflict resolution*" with "*joint decision-making*," since they considered both as related to different levels of the same process.

Nevertheless, nobody can assure that integration can always be accomplished as an ever-lasting source of collective learning. As pointed out by Coopey (1996), particular groups or even individuals internal to an organization can create a barrier to organizational learning, due to the embeddedness of their values and routines. Contrasts between a group and another, which may occur because of differentiation, can also hinder or impede organizational learning. As argued by Child and Loveridge (1990), who analyzed the reaction of European services to the provision of innovative information technologies, intraorganizational learning may be controversial and not necessarily cooperative, insofar as specialized actors at the highest levels are involved. The availability of new integrated technologies increases the possibility of introducing new ways of organizing work and this unveils the contrasting interests and perspectives of the different groups, that, in other occasions, would be normally tamed.

A similar conclusion was reached by Scarbrough (1996), who analyzed information technology plans in financial organizations in Scotland. Learning depends on the opportunities offered by information technology to handle organizational redesign: such opportunities are processed through the social building of various classificatory systems, everyone of which is defended by a certain party that is interested in advancing its own point of view. Thus, the construction and redefinition of meaning become essential and are the way to express the integration of all the contributions to organizational learning brought forward by the specialized groups that work within the organization. For this process to occur steadily, it is necessary that all actors trust each other and are willing to speak openly and frankly, although this is not always sufficient to guarantee that existing contrasts are promptly solved.

As pointed out by Lawrence and Lorsch (1967), managers are those who have the main responsibility for mediating the process of integration and differentiation and finding the solution to intraorganizational contrasts. Their duty consists in bringing to light

the people who have the adequate skills and assist them in placing together the different frames of meaning that embody their knowledge. Though, such task is not exempt from criticism, when communication is mediated and not straight forward, as it happens to be susceptible to reformulation and reinterpretation. Those who manage the exchange of information, such as gate-keepers, have a considerable power and consequently play a decisive role in facilitating or impeding organizational learning. And also those members whose job lies on intraorganizational boundaries, such as coordinators, fulfill the important task of assuring the integration on which effective learning is based.

At times, organizations need to learn the ways to improve their integration: this occurs when external pressures, such as those from customers, become urgent. Such demands may stimulate learning to the point that the organization becomes more than the simple sum of its parts, differently to what normally happens. In fact, as underlined by Hedberg (1981), an organization generally knows less than all its members put together, because of communication difficulties. From this standpoint, it can be easily understood that, for an organization to be successful, it is important to create a synergy among the different specialized areas of knowledge, in order to accomplish the process of organizational learning.

Another type of integration necessary for encouraging organizational learning was described by Child (1982): the integration of professional staff within the management structure. The scholar distinguished routine and nonroutine expertise. The former is defined by a low level of expertise, while the latter, which is characterized by a high level of expertise, evades management control, because it is not open to “*close definition and procedure*,” that means that its characteristics cannot be easily transferred or may not be transferrable at all. It is important to highlight that the unspecified content in professional work will be more extended at the highest levels of professional staff where judgment rather than technique is considered the main resource. The need to exploit the almost tacit knowledge possessed by specialists tends to accelerate integration efforts.

In conclusion, two are the demands to guarantee that specialists contribute to organizational learning. First, specialists have to be encouraged to share their knowledge, through an adequate system of rewards or career prospects; second, they have to be led together with all those who take part in the learning process in a direction that permits a positive contrast of opinions, while moving toward a favorable solution: this can be achieved, for example, by creating task forces. As argued by Mueller and Dyerson (1999), if neither of the requirements are satisfied, that is if specialists are not appropriately motivated or they are not effectively brought together, so their knowledge remains widely unexpressed, their contribution to organizational learning will be almost nonexistent.

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