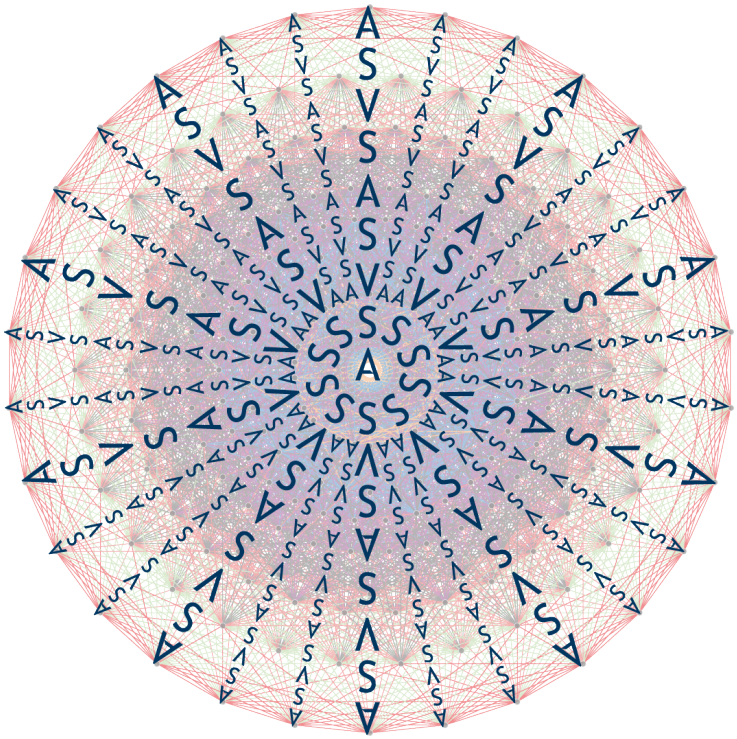

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Authors:	Paolo **Piciocchi,** Marialuisa **Saviano** and Clara **Bassano**
Title:	*Network creativity to reduce strategic ambiguity in turbolent environments: a Viable Systems Approach (vSA)*
Reference:	**Various Authors, *Contributions to theoretical and practical advances in management. A Viable Systems Approach (vSa)*, International Printing, Avellino, 2011.**

CHAPTER V

NETWORK CREATIVITY TO REDUCE STRATEGIC AMBIGUITY IN TURBULENT ENVIRONMENTS: A VIABLE SYSTEMS APPROACH (*VSA*)*

Paolo Piciocchi, Marialuisa Saviano, and Clara Bassano

1. INTRODUCTION

In a dynamic context, a firm by means of planning and flexible organizational systems ensures competitive advantage with complementary resources and competence. When business viability and survival depend on innovation and creativity it becomes fundamental to seek and put in place a modular type of organization that guarantees cooperation and collaborative learning.

A network approach characterizes competitive creative firms which speed up, broaden and transfer specific knowledge, producing systematic innovation. Indeed, the success of competitive strategies depends on core competences and it is largely influenced by

* Although the views and ideas expressed in this chapter are those of all Authors, the sections 3 and 6 are attributed to Paolo Piciocchi, the sections 1 and 4 to Marialuisa Saviano, and the sections 2 and 5 to Clara Bassano.

organizational structures, collaborative mechanisms of governance and integrated processes of cooperation. Strategic approaches based on flexibility and integration impact on the organization structure of creative firms which thanks to the combination of scale, purpose and variety economies (Di Bernardo, 1991) exploit exponential value processes, managing and controlling the complexity of the context. Creative firms prefer networks characterized by open informative exchange facilitating interactions and specific/distinctive knowledge sharing. The purpose of this paper is to show how creative firms can produce a unique, innovative and creative offer in a strategy-action-resource-based process context.

Constant upgrading of creative and shared processes leads to the organization of relations in terms of externalizing, joint strategies and socializing so as to synergize tacit and explicit knowledge held by network partners. A creative vision and the implementation of favorable mechanisms of creativity ensure systemic value creation for innovative systems: in fact, both components sustain self-organizing and self-creative processes concerning resources and distinctive and sustainable competitive advantages.

Strategic highly creative planning, envisages systems requiring adaptation and structural transformation to improve network relations. This does not impede the need on the part of the system to guarantee new kinds of routine processes i.e. innovative systems" for a creative network in which each system's component has to be proactive and contribute to collaborative and creative action.

The paper, underpinned by different resource based theories – Resource Based View and Knowledge Management (Penrose, 1959; Barney, 1986; Wernerfelt, 1984; Eisenhardt, Martin, 2000) – and by the conceptual framework of the *Viable Systems Approach* – (***VSA***) (Golinelli, 2000, 2002, 2005, 2008, 2010, 2011) – aims to contribute to highlighting network characteristics, governance and management of value mechanisms in complex systems. In the (***VSA***) perspective, the government of the firm as a viable system, governs the processes of interaction between systemic components characterized by high levels of creativity and originality.

The paper analyses the concepts of innovation and creativity as viable and competitive factors for modern firms. Strategic behavior, organization, financial structure and market relationship characterized by these aspects can govern innovation, in other words, the

implementing of strategies based on differentiation, creativity, intuition and abduction).

2. THE INNOVATION AND CREATIVITY TO THE VIABILITY OF MODERN FIRM

Actually, firms operate in highly competitive and unpredictable dynamic contexts where it is relevant the ability of government to monitor developments ensuring the conditions of flexibility and the elasticity of the operative structure in order to adapt strategic behavior to external changes (Golinelli, 2000). The continuous search of consonance and resonance (Barile, 2000) with the context means an approach to manage complexity that requires the constant recasting of the binomial entrepreneurial capability – market capability.

In this sense, nor the only entrepreneurial capability, nor the only market capability, may ensure the survival of the organization and the creation of value; in fact, the firm viability depends on a careful strategic analysis to get competitive and defensible advantage and relative profits. Since government and management decisions influence the process of value creation, then it is fundamental to qualify the characters that allow the construction of the competitive advantage: innovation and creativity.

Both characters determine the firm's being (entrepreneurship) and the firm dynamics (market behavior). That is why it is important to highlight the aspects that, directly and indirectly, affect on the configuration of managerial assets and the differentiated strategic behaviors:

- the influence of the context and market factors;
- the adequacy of the organizational configuration;
- the capabilities and the competences of human resources.

Concerning to the influence of the context and market factors on the entrepreneurship, the firm is constantly being caught by sudden and differentiated changes not only economic but also social, political and technological.

The environment influence on organizations defines a close link between changes of context and firm dynamics, so it is appropriate a strategic behavior that could be consonant with the variability of market expectations. Furthermore, since the changes of the market are not homogeneous, the viability of the firm depends on the ability to

bring strategic options consistent with the different expectations of stakeholders.

The search for conditions of consonance to develop resonance with the supra-systems (stakeholders) implies a second important aspect: adequacy of organizational configuration to entrepreneurship. The management must seek an internal organization able to guarantee that synergies as operative processes in the structural components – tangibles and intangibles – are not limited to formal and bureaucratic configurations which hamper the innovative potential of the organizational components and, therefore, limit the creativity of the firm.

Finally, human resources. The analyses refer especially to the human resources which exercise the decision-making power and affect the business formula. Indeed, the innovative and creative capabilities and competences of business decision-makers are decisive for the viability of the firm and the strategic approach of the competitive scenario.

Therefore, the success of an organization depends on a virtuous circle that feeds not only the entrepreneurial vision but also the market direction. The theoretical foundations of this circular causation are the Resource-Based View – RBV (Penrose, 1959; Barney, 1991), which concerns the strategic aspect of the firm, and the Resource-Advantage Theory – RAT (Hunt, Morgan, 1995) – which expresses the competitive capability of organizations in terms of cognitive and intangible resources. In fact, the business strategic value, as cognitive asset capable to generate innovation and creativity, is the result of a process of collection between basic capabilities and firm competences which seeks to change the routines and allows organization to express viability through the creation of knowledge: the only certainty is uncertainty, the only source of competitive advantage is the knowledge (Nonaka, 1994).

Today, the thesis – that firm competitiveness reflects its ability to produce "cognitive differential" –, suggests to focus the attention on innovation and creativity; these allow to the firm, on one hand, to internalize the knowledge – improving the circuit of basic capabilities-firm competences –; on the other hand, allow to formulate strategic behavior and differential operative processes considering their competitors, so to produce value for all stakeholders.

3. Research methodology: Resource Based View (RBV) – Knowledge Management (KM) and Viable Systems Approach (*VSA*)

RBV recent developments (Dierickx, Cool, 1989; Teece, Pisano, Shuen, 1997) focus on firm dynamics. The development of learning and innovation capability is based on the management of information asymmetries of process related to the intangible resources useful to create differential value. In fact, it is the ability of entrepreneurial to define the best practice of intangible resources to create competitive advantage (Miller, Le Bre¬ton-Miller, 2005).

This statement derives from the conceptual framework of the Knowledge-Based View – KBV – (Conner, 1991; Grant, 1996; Kogut, 2000) and doesn't move the focus from the strategic capabilities to those organizational but certainly, places these in a critical position in the process of value creation and knowledge transfer.

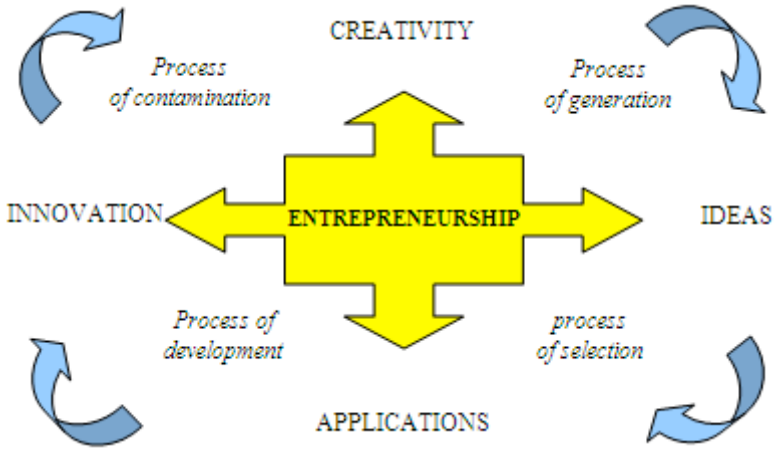
In this logic, it is re-interpreted the role and the importance of routines (Nelson and Winter, 1982) that are too often considered as a brake of innovation and creativity. Particularly, in the business contexts, characterized by high creativity – i.e. the film firm, fashion, entertainment – the only differential resources don't allow to realize original and creative output: it is the ability of synthesis, coordination, preparation of them that ensure "uniqueness" and "unrepeatability" to the product. This means that even the routine is a necessary condition, but by itself not enough, to determine an innovation behavior and to ensure the creativity in the processes and products.

Innovation expresses the entrepreneurial capability to "exploit routines"; such routines have in itself the characters of innovation because their modification produces an "intelligent" recombination of existing practices; the creativity, instead, considered as an expression of human being and of firm dynamics allows to the entrepreneur to guarantee renew routines so to obtain, in a planned way, more consonance with the variety and the variability of the context (Golinelli, 2008). In this sense, the creativity is the capability to joint existent elements to new connections, that could be useful (Poincarè, 1905).

Creativity and innovation are closely related: if the technological environment "suggests" the activation of the innovation process, then, within the firm, the creativity of the entrepreneur induces innovative methods in routine and in output. Within the firm as a system it is developing a species of processing of creativity in innovation: the creativity would represent the input and the innovation the output (Vicari, 1998).

This means: if the creativity identifies a cognitive process that can generate new solutions, then the innovation is the product of a complex cognitive processing based on selection criteria. The following Fig. 1 shows the virtuous circular process linking creativity and innovation.

Figure 1 – The virtuous circular process between creativity and innovation



Source: personal elaboration.

The circularity between creativity-innovation is based on a series of processes which allow the entrepreneur to generate value for the firm, through its routines. In particular:

- *process of generation*. Creativity induces entrepreneur to generate the assumptions of action (ideas) in response to the stress;
- *process of selection*. The generated ideas are evaluated in terms of appropriateness and feasibility; from this evaluation

it is selected that one that seems to be more coherent to entrepreneurship and market behavior;

- *process of developments*. The implementation of the idea (choice) produces process and/or product innovation;
- *process of contamination*. The innovation has effects on creativity; in fact, the process of innovative learning (growth and/or improvement of routines) increases the creative potential of the firm and this is happening in incremental processes of generation of new ideas.

Of course, the model is simplified; if it is shared the logic of process, so it must be accepted that in companies the decision-making mechanisms and operational express in complex interactions between creative subjects/objects and innovative objects/subjects: the relationship between creativity-innovation must be considered in terms of circular causality and not simply in terms of linear causality.

From a purely entrepreneurial viewpoint, innovation, producing new ideas or solutions, makes challenge management possible, improving the organizational efficiency and effectiveness. This means that the application of an innovation requires greater specialization and, therefore, contributes to create firm fundaments for the differential and sustainable competitive advantage (Argyris, 1964; Barnard, 1938; Burns, Stalker, 1961; Chandler, 1977; Child, 1972).

Innovation, therefore, is a change in the product, in the production process, in organizational roles, in management and government of the firm. What is important is that radical and/or incremental innovation, is able to produce a commercial success (Di Bernardo, Rullani, 1985).

Incremental or radical innovations are linked to the creative continuity and to the creative gap: a certain (creative) phenomenon produces until causes a discontinuity, that from the point of view of the phenomenon is perfect continuity, but from the point of view of the system is instead a discontinuity (Vicari, 1998).

Even though in some cases innovation leads to a radical break with the above technical and technological paradigm (routine), it is not possible to speak of absolute discontinuity, because knowledge is built incrementally and exploits systematically the sedimentation of the past.

Then, innovation, even radical, can be interpreted as the effect of the accumulation and learning practices of the past; inside of the

innovation process we can find the logics of continuity and incremental of values and experiences of the past, for which innovation in itself is realized through an evolutionary and gradual process which is progressive and constant.

This means that the process of innovation and innovation are key-conditions for the development of creative dynamics; these, also represent the sap of innovation and of innovation process.

The creativity, linked to cognitive processes of generation, relates to the entrepreneurial character; that means the ability of management to address the dynamic variability – the possible but uncertain – of the context and, therefore, of the business. Creativity, in itself, is not predictable; only the creative process of the firm as a system it may be "formalized"; as it often happens, a firm, originally, fit the environment to its own competitive strategies and, as time goes on, tends to formalize creative mechanisms of the system to achieve an innovative development but always coherent with the mission and vision.

In a modern view, the creativity thinking has provided a conceptual framework of business strategies typical of the perspective of Strategic Management (Porter, 1985; Grant, 1999; Valdani, 2003). In fact, the alternative between the two macro-detailed rules for the creation of the competitive advantage – cost leadership and differentiation – do not seem to be more appropriate for the actual competitive dynamics; cost leadership or differentiation should be winning a clear guidance to cognitive resources, innovation and the creativity that represent basic characters to the generation of incremental value, sustainable and creative.

Companies need to gain strategic guidelines based on the cognitive relationship, on the knowledge, on the originality; this implies that creativity and innovation are the engines, on one hand, of the viability and, on the other hand, of competitiveness. The problem is the ability of the organization to exploit the virtuous circle of creativity-innovation for reach differential performance in terms of a competitive strategy, of business model, of product, service and processes.

In this sense, we understand how the theory of Schumpeter on "creative destruction" has validity not only and exclusively in terms of innovation, but also for intuitive and creative processes: *"the new can occur only putting between brackets the known, the pre-constituted, the experienced and going with courage into the uncertainty of*

broader spatial and temporal horizons dominated by symbolic language, the analogical, the circularity, the non-linearity. That is why we refer to self-organization capable to generating sense, to order created by the disorder, although necessary to the evolution of knowledge" (Schumpeter, 1942; Ciappei C. and Bianchini, 1999). Intuition, therefore, is part of the creative potential and supports the government in the management of the cognitive variety and variability to reach new solutions of optimization.

Today, creativity is not an option anymore, but it is a necessity; creative organizations base their competitive behavior on creative, exclusive and original patterns – that allow tackling the problems with new practice, but also through a combination of existing routines.

The particularity of the creative mechanism is due to the nature of the activation process of the "creative moment"; this creative moment does not correspond to the simple intuition, but to a process of abduction that emerges from the variety of knowledge owned by an organization (Barile, 2006).

The growth of complexity and the strong competition have enhanced the contributions of the theories and of the relational configurations – RBV, KM, Viable System Approach (***VSA***) – determining new conditions of competitiveness, based on cooperation and on the search for extremely flexible solutions. This implies that the firm is viable when it is able to build and improve its *creative cognitive capital* which means that the potential competitiveness of the firm does not only derive from technological innovation, but also from creative and intuitive capabilities, that generate a unique differential value hardly reproducible and imitable.

In (***VSA***) approach, the firm is a viable system (Golinelli, 2000, 2002, 2005, 2008), a modular organization that satisfies three fundamental systemic conditions:

- ✓ partial openness, that means the ability to exchange, in a selective way, resources with the systems of the context;
- ✓ contextualization, that is the search of viability through the interaction with certain privileged entities, such as supra-systems that influence survival;
- ✓ dynamism, namely the development of the structure in coherence with challenges.

The interpretation of the firm as a viable system introduces two innovative concepts for our analysis: consonance and resonance.

The consonance refers to the degree of integration among structures, i.e., their potential structural compatibility for exchange with the stakeholders of the relative context (relations and connections); the resonance is the realization of the potential compatibility between parts (consonance) through operative collaboration in order to reach a common goal; in other words it means the ability of the system to create synergy with other systems, maintaining a shared goal (equi-finality of relational systems).

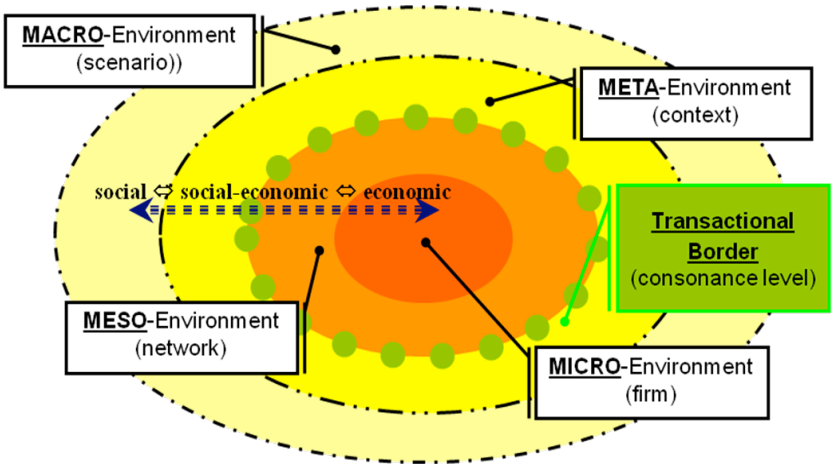
But the question is: how can we achieve a creative and innovative network?

As you can see from the figure 2, the capacity to achieve a creative and innovative network suggests the interpretation of a *scenario*, in which the firm as a system expresses its viability and pursues the aims of survival.

The scenario is read to different logical levels and with different types of relationships not only economic but also social.

In particular, the Fig. 2 shows the connective tissue of the firm as a system with different degrees of connection and influence.

Figure 2 – The relational environments of the firm as a viable system



Source: personal elaboration

The first level, named *micro*-environment, refers to the firm in itself, to the internal organization enclosed in its owners borders and under direct control; the second level is that of *meso*-environment, characterized by economic relations – that become also social – that assumes the configuration of collaborative stable network: it is the extended structure, i.e. the network of skills and competences, internal and external, done through the different forms of alliances and strategic and/or operational agreements; the third one identifies the *meta*-environment, the viable context, where it is developing the relations with the supra- systems to choose and activate the shared process of value creation; finally, the macro-environment, named the general scenario, that exist, irrespective of the purpose and the business goals, and from which it is extrapolated, with a selective process, the relational context of survival (Pellicano, 2002).

To sum up, the problem is that the firm as a system cannot express viability by itself in this Scenario, so it needs to create a Network. Consequently, it is important to clarify and focus on the concepts of *meta* and *meso* environment. The difference between these environments is that while in the former we can find general supra-systems, in the latter we can only find the specific components of these supra-systems. Then, if you look at the *Transactional Border*, the transition from the general to the specific it is characterized by greater consonance. In conclusion, according to our approach the innovative creativity of a firm depends on the ability to create networks based on consonance and resonance.

Moreover, relations that are functional to the survival of the firm, determine strategic guidelines and the creation of the competitive advantage; for these reasons, the management must make consonant its structure with that one of the relative sub-systems and supra-systems, through a continuous process of adjustments and changes.

Innovative creativity firm, therefore, depends on the ability of decision maker to select and establish the relational and cooperative conditions; in this sense, the management realizes innovative and creative processes, that allow to be structurally consonants with the changes in the context and to systemically respond to the expectations of stakeholders. This consideration underlines the relevance of strategies for change – innovative and creative – which can ensure the viability of the organization in the context: strategies to enable the pursuit of competitive advantage and the generation of incremental value that is social and economic.

The theoretical foundations of innovative management is the Knowledge Management – KM – (Duncan, Weiss, 1979; Weick, 1979; Senge, 1990) that suggests to interiorize the processes of recovery, organization, systematization of what, in terms of knowledge, is translated in the firms as skills, experience, information, ability to express competitive advantages. The problem to transform the knowledge into assets suggests management to involve the relational components in the creative-innovative process for the management of change.

The KM becomes, then, a new paradigm for re-interpret the logics of government and management of the processes of acquisition, use and knowledge transfer. Knowledge, tacit or explicit, are the asset of the economic value, but also social, in which to invest and commit all of the extended organizational resources: the employees, suppliers, partners, the agents (intellectual capital), or the direct and indirect stakeholders.

Business knowledge and creative capability, resulting from continuous interactions, from individual and team processing capabilities, from sharing in decision making processes and in organizational arrangements. Context, and its change, are "indicators" to suggest continuous and shared growth of the creation and learning pathways.

If, therefore, from a purely entrepreneurial viewpoint, the concept of organizational creativity is applied, then the role of government is to adjust and regulate the innovative processes and the operative mechanisms so that the creative pressures, which may also make the system unstable, are interiorized and produce incremental value.

This is, in a way, to ensure that the firm alive continues states of solicitation to change that compromise the internal balance of the structure, in order to supply the innovative processes for the search of a new equilibrium based on intuition and creativity.

To facilitate such dynamic growth, it is necessary to introduce in the organization a *monitoring systems of viability* (Piciocchi, 2003) so, on the one hand, to verify and manage the resonance the supra-systems of the context and, on the other hand, to ensure level of consonance with the different structures with which the firm has relationships, to allow adequate levels of efficiency and effectiveness.

4. THE CREATIVE COMBINING OF VARIETIES IN BUSINESS NETWORKS

Creativity has different value at organizational and individual levels. If creativity involves an organization's ability to evolve as a *system* (Vicari, 1998), it is clear that the creative and intuitive abilities of the individual components are necessary but not sufficient for the viability of the organization as a whole. It is necessary, in fact, that basic capabilities (creative resources) are connected and coordinated in order to generate a creative environment for gaining competitive advantage.

A business system, to be creative, has to be open to change. If it is accepted that the propensity to change and to evolve is a necessary precondition for increasing organizational creativity, then we can consider a system creative, one that follows an undefined, unpredictable pathway. In other words, system creativity is characterized by its evolving in a non-predetermined, unknown, unquantifiable, indefinable manner i.e. when it is not possible to determine the system taking into account the input provided (Vicari, 1998).

From a systems perspective, the creative process can be achieved by devising a modular structure in a collaborative context, at *micro* and *meso* level in order to consolidate collective learning processes that develop the creative and innovative potential of the system.

Therefore, *the creativity of groups or systems creativity*, not the logic of the closed model of innovation (Chesbrough, 2003) becomes the key factor. The speed of change in scenario necessitates an underlying collaborative framework because the firm, at a *micro* level, would not be in a position to adapt itself to the context dynamics. Instead, participation in modular projects –*creative networks* – which exploit cognitive synergies, improves the process of learning and accelerates the acquisition of relational skills that are heterogeneous and specialist but shared. The development of creativity in complex organizations however, needs to facilitate the coordinating of roles and to reduce information asymmetries through a trustee communication. Risks are linked to the difficulty of managing different organizational "environments" and "opportunistic" conducts which undermine the relational trustee. In "Table 1", the main characteristics of creative networks are summed up.

Table 1- Creative networks

Type of network	*Creation of a creative network*	*Support by a practical community*
Resources used	Combination of firms with different specializations	Connection between actors with similar knowledge
Coordination	Strong and direct	Weak and direct
Focus on the type of innovation	Radical/significant *Long-term multidimensional learning*	Incremental/maintenance and knowledge diffusion *Problem solving*
Functions of the coordinator	• Activation of resources with distinctive competences for the management of the network; • Selection of participants; • Rules; • Performance Monitoring; • Mechanisms of premium or sanction; • Solution of Conflict by government; • Formalization of property rights.	• Protocol for the participations • Protocol for the use of results
Advantages and Risks	• High number of participants that make a bid for power; • Un-territoriality and specialization; • Supports to *problem solving*; • Network has solid inter-organizational basis but the risk to manage virtual transactions increase as time goes on; • Difficulty to balance organizational costs and shared advantages.	• Openness of organizational borders; • Less rigidity of job considering specialized teams; • Renew of the use of knowledge; • Virtual Relation Mix; • Community has to reduce collapse risks on a small team not easy to govern.

Source: Belussi, 2007.

For companies to develop creative capacities at the level of organization as a whole, setting up a *creative organization*, which systemically enhances the creative capacities of both individuals and structured nodes, requires a governing body that, by expressing creative ability on the basis of a project approach and picking up the signals of opportunity for change both inside and outside the organization, increases its whole *variety*, by guiding appropriate processes of combination and recombination of resources (*elements of variety*) and exploiting synergies between complementary interacting varieties.

Creativity involves the capacity to invent, to discern, i.e. to select from all the combinations available, the more fruitful being those elements drawn from areas far away. "It is certain that the combinations which present themselves to the mind in a kind of sudden illumination after a somewhat prolonged period of unconscious work are generally useful and fruitful combinations […] all the combinations are formed as a result of the automatic action of the subliminal ego, but those only which are interesting find their way into the field of consciousness […]. A few only are harmonious, and consequently at once useful and beautiful […]" (Poincarè, 1908:58).

Thus, the governing subject of a firm has to devise a variety of perspectives, which lead *to combining unexplored associations and exploiting opportunities of cross-fertilization* (Koestler, 1964).

Therefore, in order to enable the generating of a constant stream of *variety* in the organization, a business system has to be open minded with regard to change and innovation. Since, as mentioned previously, there is a circular link through which creativity (input) is transformed into innovation (output), attention is appropriately focused on creative process. In particular, on the nature and mechanisms of the instant of creativity, namely on how the creative idea is generated. It is that the instant of creativity is the result of a series of continuous interactions and exchanges, between individuals and groups. In this process, the change of context "stimulates" the relative self-creation and self-learning processes.

The moment of creative generation is significantly fueled by internal processes of self-reflection, independent recombining of what we call *viable system variety*. In fact, "most striking at first is this appearance of sudden illumination, a manifest sign of long, unconscious prior work" (Poincarè, 1929:388). Consequently, creative instants are not predictable, but the result of ongoing processes of learning, which are grafted onto existing variety, increasing the potential of the creative generation of the system.

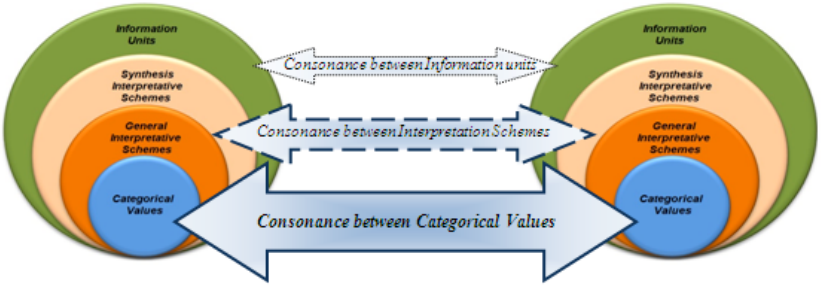
Furthermore, the creative process starts with awareness of an existing problem and the decision maker undergoes unaware, a process in which intuition and creativity act in synergy creating the ground from which the original solution derives; this clearly has an *abductive* nature. The peculiarity of the creative process that we would like to underline is the nature of the activation of the creative moment, which can be defined not as "intuition or insight" in the common sense of the terms, but as *abduction*, in the sense defined by Barile in line with Aristotelian thought. In other words, a creative moment which emerges not "ex novo", but from previous sets of knowledge – i.e. variety – embedded in the organization (Johnson-Laird, 1993; Barile, 2009).

The innovative perspective of this work stems from the idea that to encourage a firm to develop creative organizational capacity, an efficient and effective process of selection and the combining and re-combining of resources (*elements of varieties*) is necessary. The (VSA) methodology offers a powerful tool in terms of an interpretation scheme to represent, analyze and investigate the

structure and dynamics of a *viable system* entity as *information variety* (see chapters 4 and 5). The assumption is that the knowledge that identifies a *viable system* is made up not only of items or organized structures of information, such as databases, but mainly of deeply rooted values, beliefs, and opinions, as well as cognitive and interpretation schemes. These conceptual elements are stratified at several levels of depth: the *information units* are to be found at the most superficial level, while what we call *categorical values* are the deepest level and the *interpretation schemes* (*general* and of *synthesis*) are somewhere in the middle. The framing of these elements at three levels defines the variety of the viable system, expressed through different concepts of the general idea of knowledge, and identity. On the basis of this model, the interaction between different varieties generates different outcomes depending on their degree of *consonance*.

The assessment of the degree of consonance implies comparing the respective sets of varieties of interacting entities as represented in Fig. 3 with reference to the dyadic level of interaction (see Chapter 4).

Figure 3 – The diadic consonance model



Source: www.asvsa.com

On the basis of the proposed model, the outcome of interaction between varieties depends on two factors: *consonance* and *resonance*. Consonance expresses the level of sensitivity characterizing variety in perceiving new information. Resonance, in turn, as *emerging* from the interaction, represents both the process and the effect of interacting entities which are in consonance.

Interactions between systemic entities, in essence, determine a cognitive circular process in which *perception, intellect, memorization* and *information process* (reasoning) creates a virtuous pathway that gradually increases the levels of variety. The process generates the synergic *combining of varieties* (a prerequisite for creativity), if the interacting entities are *consonant*.

The approach therefore, suggests investigating the varieties of each unit characterizing the network, synthesizing their interpretation schemes and above all identifying the nature and function of the categorical values held.

Therefore, in a process of *creative combining of varieties*, the key factors underpinning good governance are based on the ability to select, combine and recombine creatively, resources in the network, constantly monitoring the conditions of *consonance* at both the dyadic and the network (context) level (Golinelli, 2011) with the view to developing resonance. In fact, the governing subject has to consider that while the *dyadic consonance* can be intended as the progressive alignment between the two systems varieties converging on a joint and shared evolutionary direction, the *context consonance* must be intended as a dynamic composite reorientation progress made by all *viable systems* connected in the network. Furthermore, it is the responsibility of the governing body to identify any element from the organization that could impede the creative process (Bertone, 1993).

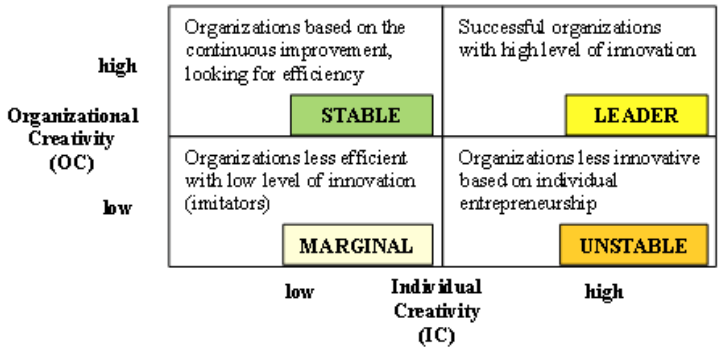
5. PRACTICAL IMPLICATIONS: THE GOVERNMENT AND THE MANAGEMENT OF CREATIVE ORGANIZATIONS

Concerning to business creativity it is important to establish a classification of different creative organizations. The Fig. 4 shows different types of creative organizations that are identified considering two variables: the *individual creativity* (IC) and the *organizational creativity* (OC). In particular:

- ✓ I quadrant (OC low-IC low). Firms included in this sector following the change only passively, or are waiting for the results of innovative processes of other firms that produce positive effects so to imitate behaviors and solutions. That is the reason why they are defined *marginal*;

- ✓ II quadrant (OC low-IC high). Firms included in this sector produce innovation thanks to the individually creative and intuitive activity; this implies that there is no systematic orientation to innovation, but the answer to the change is due to the capability of some extemporaneous human resource that consider the innovation process discontinuous. For this, they are defined *unstable*;
- ✓ III quadrant (OC high-IC low). Firms included in this area don't have a prominent creative capability that could also generate radical innovations; the answer to the change is continuous, gradual but slow as it is the combined effect of the various components and synergic systems that must be coordinated with the development of creative processes. For this, they are defined *stable*;
- ✓ IV quadrant (OC high-IC high). Firms included in this sector are defined active, in fact they have in their own DNA genes of high creativity; in these organizations the intuitive capability of individuals and the capacity of the whole system to dictate the change are exploited. That is the reason why they are defined *leader*.

Figure 4 – Types of creative organizations



Source: personal elaboration.

Leader firms are organizations that, considering an open managerial orientation to change and to anticipate market behavior, are defined as "proactive"; the dynamism of these firms implies a poly-cellular structure that consists of a series of specialized and inter-

functional networks capable to guide the competitive strategies, to influence the markets and to grasp the weak signals of change. These firms are also known as "multifarious", because, as at individual level, as systemically, they develop a continuous collaborative learning raising cognitive barriers with high levels of specialization.

To define the most appropriate approaches of government for creative organizations and considering the research methodology here adopted, actually it is necessary a network creative process; that means to investigate on the composition of variety owned by each networked entity, identifying, in particular, patterns that that foster mutual synergy.

In fact, interactions between systemic entities are reflected in cognitive circulars processes in which there is a subsequence of the perceptive moment, the intelligence, the storing and processing of information. This process is virtuous, that means it is capable of generating synergic effects between different varieties, if these varieties are consonant and resonant. Therefore, for the innovative-creative purposes, it becomes relevant the processes of identification, interpretation, selection and combination of varieties of entities connected with the organization.

To sum up, what are the practical implications of our study?

In the light of the methodology used, the viability of the firm needs to be expressed through a creative network organization. In other words, to obtain greater levels of consonance and resonance the different varieties specific to network partners need to be analyzed.

Consequently, in this perspective, we can assert that, *consonance* and *resonance* guarantee the best synergic effect in the creative and innovative process.

Obviously there are some limits connected to our study.

First of all, the study at present is merely descriptive, because it has not been based on empirical research.

However, in future research we intend to examine empirically the real effectiveness of creative and innovative network processes.

In any event, our analysis shows that:

1. the effectiveness of creative and shared processes depends on a clear vision of creativity and on favorable mechanisms for creative action;
2. what is needed is dynamic management capability to combine different but modular varieties to achieve a network system creatively and innovatively.

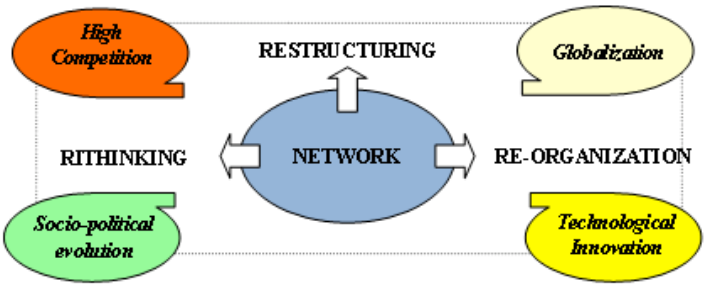
6. CONCLUSIONS

In a dynamic context, the firm has difficulties to manage changes by itself, that is why modular solutions – networks – are appropriate to combine the "capacity of production of specialized value" of collaborative systems. Since creative-innovative industries (Caves, 2000) require integration among different entities, then it is necessary to create the conditions for a systemic creativity based on trustee and synergetic relationship among these entities. A network approach, which has been shared in many fields, has the following basis:

a) developments of technology, which have increased the information flow and reduced the time of communication between organizations;
b) globalization of scenarios that has lowered the interaction barriers;
c) impossibility to produce, manage and/or internalizing knowledge and skills necessary to carry out the activities with adequate flexibility.

Fig. 5 represents the environmental variables (high competition, globalization, socio-political evolution and technological innovation) which are lobbying and lead the firm to seek new organizational arrangements according to the reticular setting.

Figure 5 – Change processes and business models



Source: personal elaboration

The viability and the survival of individual firm don't depend on itself; they are dependent on innovative-creative capability that may

not all belong to the single organization considering the specific character required. That is why organizations prefer reticular structures – sector and/or filière – that increase specialization and generate greater value for the partners. The opportunity to share the different specializations and to exploit resulting synergies represents a competitive option that reduces the structural rigidities, making more flexible the business borders and guaranteeing greater production of the innovative-creative value shared.

Modular organizations are, in fact, networks of relations that exploit the creative capability of systems partner: networks requirements shall facilitate the exchange of knowledge, regulate the processes of learning and adds the innovative potential. In particular, collective learning affects on business behavior as supports the stability between chaos and certainties.

Literature qualifies two types of learning:

- adaptive learning or closed-circuit – single loop learning – (Argyris, 1987);
- generative learning or dual circuit – double loop learning – (Norman, 1985).

The aim of this paper is to highlight that the effectiveness of collective learning stimulates also the creative action of individual companies; this leads to consider that the competitive advantage must generate through continuous processes of entrepreneurial collaboration. In these cases, it can be said about "structural creativity and not improvised" that is linked to combined learning processes, continuous and shared, typical of systems with a high degree of openness and strong synergistic and collaborative capacity.

Creative firms, complex and modular, must abandon trails of innovative growth typical of unstable firms (see "Fig. 4"), or based on intuition and individual creativity, to adopt participatory and collaborative solutions with synergistic high value. In competitive complex contexts, the intuitive managerial approach, don't allow to produce systematic and incremental creativity. Therefore, the role of management is essential, for the selection of possible collaborative options. We must abandon the models of transaction and integration that are unable to govern the varieties of routines, adopting plans of cooperation that help creativity, generate innovation, and for this, require the participation of expertise held by different partners.

These aspects shall be applied both to the great innovative firms, and for small business: in particular, in this last case, the overlapping

of roles between the entrepreneur/owner and manager, is often a restrictive factor in the generation of systematic innovation. In fact, creative processes are slowed down by centered decision-making power and management.

It should be emphasized that the effectiveness of creative and shared processes, depends on:

- the definition of a vision oriented to creativity. The creative vision allows narrowing down the organizational strategy encouraging the involvement of not proprietary resources;
- the implementation of favorable mechanisms to creative action. The organizational set up must facilitate interactions and distribution of knowledge to improve the creative and innovative action.

In this sense, the management, responsible for the decision-making processes, expresses a dynamic appropriate capability to the current scenarios if it is able to combine its variety with that of the systems in relationship with by a creative manner. In fact, competitiveness depends not only on the owned variety, but also on the ability to share and make synergistic varieties owned by different systems.

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