International Journal of Organizational Innovation

CREATIVITY, INNOVATION AND COLLABORATIVE ORGANIZATIONS

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Abstract

This article intends to make a contribution to the clarification of the concepts of creativity and innovation using a multilevel approach of individual, group and organization, in order to show that these may be better integrated within collaborative organizations. Trying to maintain the principle of the primacy of the individual (creativity) over the business (innovation), we stressed the cognitive and emotional processes (when speaking of creativity) and power and communication (when it comes to innovation). Following on a description of group processes that try to combine creativity and innovation, we address the measurement of innovation, concluding with the need to avoid classifying an organization as innovative or non-innovative. The latter judgment should be left to the market itself. At the organizational level, we gave primacy to the concept of "organizational innovation", as it is within this framework that the best fusion between creativity and innovation may be achieved. Finally, we address collaboration in business as connecting people, ideas, and resources that would not normally interact with each

other. These decentralized organizations operate in such a way that makes it possible to abolish or, at least mitigate, the role of power. We believe that this will ultimately define the future of successful organizations.

Keywords: Creativity; Innovation; Organizational Creativity; Organizational Innovation, Creative Problem Solving; Innovation Measurement; Collaborative Organizations

Introduction

The terms creativity and innovation are often used interchangeably in the academic literature, apparently because researchers in creativity and in innovation come from different backgrounds and fail to make the necessary convergence. The field of creativity is closer to the behavioural sciences (like psychology and education) while researchers in the field of innovation come from areas related to management, economics, public administration or political science. Therefore, depending on the origins, both terms have been used with similar or different meanings, often contradicting each other. Acknowledging that this is a normal phenomenon in the scientific literature, this research intends to make some contribution to the clarification of these concepts. We will show that only at the individual level is it fairly simple to separate creativity from innovation.

This research will focus on innovation at an organizational level where we discuss what is meant by *organizational innovation* (as a synonym for *organizational creativity*). Specifically the emphasis is on, firstly, the collaboration as a means towards innovation in organizations and, secondly, on the development of organizational structures and dynamics which may foster the individual's potential and the company's profitability (see cases presented). We conclude by trying to make sense of a rather transcendent subject - the measurement of innovation.

Creativity and Innovation at the Individual Level

As Woodman & Schoenfeld (1990) recall, the term *creativity* can be seen either as a social concept, expressed by people's implicit theories, or as a theoretical construct, developed by researchers in the field. Considering the theoretical definitions, and after carefully analysing the propositions evidenced by Kasof (1995), it is possible to conclude that the construct of creativity was (and still is) used in the scientific literature to designate something perceived by others. Stein (1953) maintains that, *creativity is a process that results in novelty which is accepted as useful, tenable, or satisfying by a significant group of others at some point in time*. Amabile (1983) states that, "*a product or response is creative to the extent that appropriate observers independently agree it is creative. ...and it can also be regarded as the process by which something so judged is produced*." These examples illustrate what may be designated as *hetero-attributed creativity*, something pertaining to the *communication process*.

Envisaged as a sort of *persuasive communication*, in which the creator is the source, the original product is the message, and the judge or audience is the recipient (Kasof, 1999; Csikszentmihalyi, 1999). Therefore creativity enters the broad domain of exceptional personal influence (Sawyer, 1998; Simonton, 1995), the social processes of the making of a reputation (Ludwig, 1995), or the processes underlying the capacity to shift roles, in which the creator develops a dialogue with his or her work, anticipating the audience's reaction (Stein, 1993).

As the product of that communication process, creativity appears connected to what is perceived as new by someone other than its originator, or as the *putting to use of an idea* (Kanter, 1983; West & Farr, 1990), in the domains of production, adoption, implementation, diffusion, or commercialisation of creations (Rogers, 1983; Spence, 1994). In these cases, creativity is seen as *innovation*.

Baer (1997) and Runco (1998) also see creativity as a *self-attributed* construct. Baer considers creativity to be *anything that someone does in a way that is original to the creator and that is appropriate to the purpose or goal of the creator*. To a certain extent, it is like getting back to Galton's *intention and effort*, and in the way the individual perceives reality and develops his or her individuality. Within this view, creativity may be seen as *growth*, or development, as in Otto Rank's conception, described by Menaker (1996), of the human will as a central cause of action and creation. To Otto Rank, *each individual is unique and carries within him or her the potentiality of creating something new, different and unexpected out of past experience (via the human capacity to internalise experiences of the outer environment and making it a part of the self).*

Recognising creativity as a self-attributed concept, used by people to describe their acts at any moment is, in a sense, using implicit theories of creativity. It lies in how each individual organises and incorporates the perception of reality in his or her own self. Striving for mastery and perfection, the expression of one's own individuality and sharing with others, become essential parts of the core construct of creativity, which may, then, encompass a wider array of activities, products, processes and performances.

Creativity seems then to acquire its full meaning as a process of communication between the creator (or the product) and the judges or audience (hetero-attributed), or between the creator and the product (self-attributed). Innovation seems to be more appropriate to designate the resulting attribution made by the audience a propos the product, as depicted in Figure 1.

As a consequence, hetero-attributed creativity can only be measured through socio-cultural judgements, and is therefore context-dependent. Quoting Csikszentmihalyi (1991), '*creativity is located in neither the creator nor the creative product but rather in the interaction*

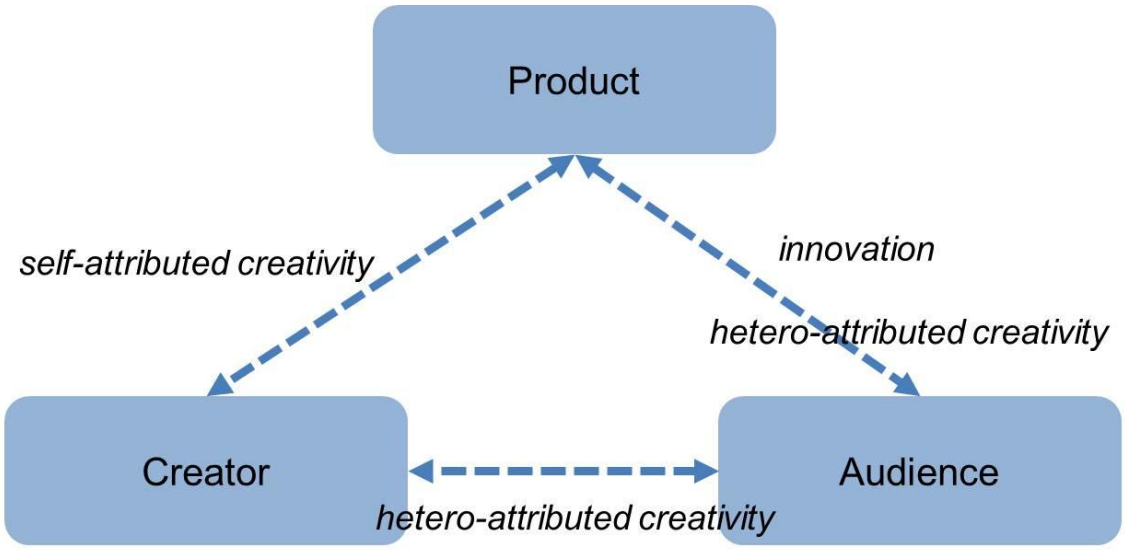

Figure 1. Creativity as a construct

between the creator and the field's gatekeeper who selectively retains or rejects original products'. In this way, the theoretical construct of creativity relies on people's implicit theories of creativity, i.e. in the ways they consider a specific product, person or process as representative of their conceptions of creativity. In addition, Ghoshal and Bartlett (1987) classify innovation into broadly two categories: those that see innovation as the final product - the idea, practice, or material artifact that has been invented or that is regarded as novel independent of its adoption or non-adoption - and those who see it as a process, which proceeds from the conceptualization of a new idea to a solution of the problem and then to the actual utilization of a new item of economic or social value.

However this distinction between creativity (undoubtedly the source of the whole process), and innovation is a minor issue in the corporate context, since the most important question turns out to be with regards to the system that allows putting the ideas into practice. Consider, for example, the invention of the famous "post-it", in the sixties, when Spence Silver

discovered non-permanent glue and tried for years unsuccessfully to convince the company of the utility of his invention. Only in 1974, his friend and colleague Art Fry, saw the value of such a glue to mark temporarily his missal in church, and managed to overcome the company's policy ("The 3M glue glues better"), giving way to the "post-it". Nevertheless, even after being fabricated and commercialized, resistance had to be broken by offering the product to internal and external consumers. Therefore, for every creative act producing an idea or a product, a social act is required to promote it in the organization and that is the reason why real innovation in companies is always a team effort (Woodman, Sawyer, & Griffin, 1993). Every innovation starts with an initial idea but needs a system to expand the individual creativity and install it at the group level. This group will need to solve a wide variety of problems resulting from the adoption, dissemination and implementation of this product.

As Burns & Stalker (1996) explained, if innovation does not necessarily need creativity to emerge, for it can be reached by introducing new techniques or technologies, it cannot be ignored during the adaptation process required to succeed in the market. Innovation for the sake of innovation can even be harmful to the enterprise, as happened when Coca-Cola tried a different flavor, or it could happen if McDonald's changed its production chain.. If we want to follow some of the authors on business management, like Johnson-Laird (1993), then we may conclude that *success in business seems to be fundamentally a matter of staying after the others have left*, thus discouraging the systematic search for innovation, at least in such a way as advertised or relating to continuous search for new products.

While individual creativity seems always to be the starting point, because it may exist even in the absence of innovation, the organization depends on it to innovate. It is easy to get ideas; difficult is to implement a system to turn creativity into profitable business. As Kilbourne and

Woodman (1999) have shown, any system of innovation depends on a wide number of variables besides creativity, such as autonomy, the available information, the reward system, education or training, the system of authority, participation in decision-making, or the team cohesion.

Creativity and Innovation at Group Level

The integration of creativity and innovation at group level can be better illustrated in group work methodologies aimed at generating ideas or problem solving (Paulus & Brown, 2003). Although Alex Osborn's brainstorming (Osborn, 1953; 1963) is probably the best known technique for idea generation and solving problems creatively, there are several other protocols for generating creative outcomes within teams. Sidney Parnes and Ruth Noller (Parnes & Noller, 1972), for example, worked on Creative Problem Solving (CPS); a method that has been subjected to investigation by several researchers including Isaksen, Dorval, and Treffinger (2000), Basadur (1994), or Buijs, Smulders, and Meer (2009). Other creative process methods are available, like Synectics (Gordon, 1961), TRIZ (Altshulla, 1996), Soft Systems (Checkland & Poulter, 2006) or De Bono's Six Thinking Hats (De Bono, 1965), but few would argue that they do not have the scientific research background as CPS does, and so we will concentrate on this methodology to discuss creativity and innovation at group level.

Even though the problem solving methodologies follow the classic steps of *objective finding, fact finding, problem finding, solution finding, decision making* and *action planning* (Isaksen, Dorval, & Treffinger, 2000), practitioners adapt the CPS process to suit specific situations (e.g. Buijs, Smulders, & Meer, 2009). The CPS process places an emphasis on problem definition, solution (idea) finding, or on both. There are also adaptations regarding the use of divergent or convergent thinking tools but these adaptations will not often influence the action plan, which is sometimes considered outside the creative process. In fact, the "idea" rules

the process output, probably because of (1) either its brainstorming and product development origins to which the process is usually aimed, or (2) by remaining faithful to a methodology used mainly for training and education (Parnes & Noller, 1972). Besides small changes in the process steps, by increasing or reducing its number, tools for idea development concentrate the changes that normally appear related to the process. While addressing this issue we will concentrate on variations of Basadur's CPS model, which focus on obtaining effectiveness (Puccio, Firestien, Coyle, & Masucci, 2006), while still allowing many adaptations.

Basadur's CPS Model

Based on the Osborn-Parnes CPS approach, Basadur (1987) proposed the *Simplex* model. This is a cyclic process in three distinct phases and comprising of eight steps (see Figure 2). Within each step there is a period of time for active divergence when individuals or groups produce as many ideas or options they can find, in a supporting environment, in which judgment is deferred to allow the perception of new relationships between facts. During this divergence period, participants are encouraged to avoid stopping ideation too early in order to maximize the number and diversity of the ideas produced. During the convergence stage participants select one or more ideas to carry on to the next step. The Simplex process is organized as follows.

First Phase – Problem Definition

This involves the following steps:

1. *Problem finding* - This comprises identification of problems and opportunities for change or improvement, within or outside the organization. After a first moment of active divergence, the active converge stage follows and problems that deserve further exploration are selected.

Figure 2. Basadur's *Simplex* creative problem solving method (reproduced with permission)

2. *Fact finding* - In the divergence moment, the group gathers as many information as possible on the selected problem and, when all useful or possible facts have been collected, the group selects just a few.

3. *Problem definition* - In this step the group reformulates the facts selected into creative opportunities or challenges. Then the more promising problem is selected to carry on to the next step, using the question "How might we…?". The challenge mapping process helps to see the hierarchy or problems and the relations between them, clarifying the big picture.

Second Phase – Problem Solving

The following steps are involved:

4. *Generating potential solutions* - The divergence moment allows creating the most radical and apparently impossible solutions, and in the convergence moment, some of them are selected for evaluation.

5. *Evaluating potential solutions* - Here it is required to generate as many criteria as possible, to help evaluating the potential of each solution. Having established the criteria, participants evaluate the potential solutions against each criterion and decide which should be implemented.

Third Phase – Solution Implementation

The following steps are involved:

6. *Action planning* - Divergence skills are required to generate a number of specific actions that may help the implementation of solutions generated previously. Then convergence skills allow selecting the most adequate actions.

7. *Gaining acceptance* - This step aims at overcoming resistance to change and involve people needed in the process to assure its feasibility. This is directed essentially to people who did not participate in the earlier steps, but whose commitment is indispensable to bring the project to success.

8. *Taking action* - Taking action is not the final step of the model, assumed as a circular process. In this step, participants start with simple, specific and realistic actions, to address the fear of unknown by analyzing what could happen and then generating ideas to cope with fear of failure, trying to turn it into advantages.

CPS Adaptation

After a series of trials, Basadur's model was reduced to five and then, to four steps (Figure 3), in order to adapt it to a 4-hour session design. The new four-step model was designed and tried, with good results: *objective finding, problem definition, action planning and the action itself*. However, as the objective finding step is completed during the pre-consulting stage with management, and the action itself happens beyond the CPS session, the process finds itself

reduced to only two steps: problem finding and action planning, in a single continuous loop, where not even the “solution” step takes place, being replaced by a series of actions needed to solve the problem. This new cycle allows for cutting more than half of the time in team meetings, making it possible to run a single four-hour session, and focuses the team in the action plan, which includes reflection on how to develop the execution, its different steps and goals, management control measures, acceptance and communication tasks. This approach provides an initial structuring of the group, during the listing of problems included in the objective, followed by an emotional linkage between members, during the convergent phase of problem definition. Then, another structuring step - action planning - where team creativity expresses itself during the "how to" develop each planned task, including its acceptance by external people and factors.

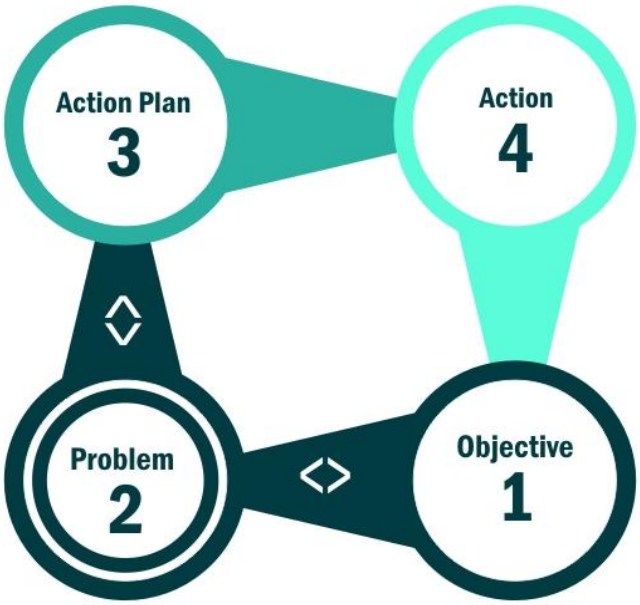

Figure 3. The CPS four-step method

The cycle of diverge-converge is still maintained during both steps: in the first step, the team enumerates all possible problems that may occur when trying to reach the objective and, then, selects a final problem definition to work with, described by a question beginning by *"What are the steps necessary to ….?"*. In the second step – action planning – the team starts by enumerating all possible actions (tasks) needed to solve the problem; then puts them by order of execution and, for each task, the "how to" is defined (including the tasks derived from the acceptance plan for the task at hand, if appropriate). Each task is attributed to a small team, which defines the exact deadline and, finally the person or organism responsible for evaluating the quality of task accomplishment (if pertinent), and the management control measures that will be associated to the task, especially the financial ones.

The method still reinforces task accomplishment through the follow up procedures of in-between one to two-hour meetings, scheduled before the project deadline and aimed at coordinating team performance, developing team commitment, and redefining the problem and the action planning. This way the team learns more about the initial objective and develops creative ways to achieve it by balancing problem definition with task implementation, learning by doing in a sort of trial and error approach. Even though any project team is supposed to follow a similar process, the method allows for a better balance between structure, planning, improvisation, knowledge management and organizational commitment. Here the problem solving process loses importance to development of the project, as it is during the action step that real problems are solved and creative solutions may arise. The *Aha!* may not occur during the meetings but many *Ahas!* will happen during plan implementation.

Creativity and Innovation at the Organizational Level

The organizational level has received more attention from research than any other level. A significant number of empirical studies, seeking to determine the antecedents of innovation, have identified the factors that influence innovation in organizations. For instance, the characteristics of (1) the organization, of its members and its environment; (2) the influence of structural factors related to group composition, time working together, the available resources, the features related to the quality of interactions between the members of the group, and others. Nevertheless, innovation is almost always the dependent variable. Indeed, as Anderson, De Dreu, and Nijstad (2004) mention, there are very few research studies in which innovation is taken as the independent variable.

As Lam (2005) states, the literature on innovation can broadly be classified into three orientations:

- *Theories of organizational design*, focusing predominantly in the link between the structure of the organization and the tendency to innovate (e.g. Burns & Stalker, Henry Mintzberg, Lawrence & Lorsh). Organizational designs such as the *N-Form* Corporation, *Hypertext Organization*, *J-Firm*, *Adhocracy (Silicon-Valley-Type Companies)*, *Spaghetti Organizations*, are examples of structures. Here the unit of analysis is the organization and fundamental research aims to identify the impact of structural variables on product and process innovation. This research stream is very solid and has anchors in the literature on technological innovation.
- *Organizational theories of cognition*, in contrast, focus in the micro processes and the way organizations develop new ideas in problem solving. They tend to approach learning (for example Argyris and Peter Senge - learning organizations) or the information and knowledge

creation and processing (Nonaka & Takeuchi - tacit and explicit knowledge; communities of practice).

- *Processes of change and adaptation* which are the basis for creating new types of organizations. It focuses on understanding how organizations can overcome the inertia and adapt to the changes occurring in the environment and the technology (for example Weick, Schein and Kanter, on culture and innovation; Amabile and Ekvall, on creative climate).

Returning to the creativity-innovation concept, we have seen that, while the innovation relates to the fields of implementation, production, dissemination, adoption, or marketing of creations, mainly based on power and organizational communication processes (Spence, 1994), creativity remains exclusively tied to the relationship between the creator and his or her product (where not even originality is important, but only the *trying to do better* linked to cognitive and emotional processes taking place at the individual level (Sousa, 2007). Damanpour (1991) defines innovation as the adoption of something generated internally, highlighting the value of communication in addition to creativity.

If we relate creativity to problem definition and problem solving, and decision implementation to innovation, this last step requires a series of problem solving and definitions in order to implement the decision or the idea. This makes it very difficult to separate the two concepts at the organizational level. In fact, when we move from individual to group and organizational levels creativity and innovation become increasingly difficult to separate, so that we can agree with Basadur (1997), when he says that there is no difference between creativity and organizational innovation. So, whenever we approach any other level beyond the individual, these terms (creativity and innovation) will be used as synonyms, and we will refer to organizational creativity as a *system to develop and channel individual creativity, through teams,*

towards profitable company innovations. However, this definition is not rigorous and does not eliminate further attempts to give meaning to the term.

Innovation, as a research construct, has its roots in the fields of economics and engineering, later in sociology, political science and education and, only recently, social psychology. As mentioned by Rowley, Baregheh, and Sambrook (2011), the variety of models, frameworks, classifications and definitions of innovation make it difficult to understand the connection between all the definitions reported by different researchers, as well as the relationship between the various types of innovations. Schumpeter (1934) is acknowledged as being the first to state that innovation is the introduction of a new product, unknown qualities to the market, a new quality in an existing product, a new production method, or a new form of commercial treatment of an existing product, a new market to the sector in question, regardless if the market already exists or not, new suppliers of raw materials or semi-manufactured, or some form of monopoly. Schumpeter and other scholars in his field (Freeman, 1982) changed the view of the static equilibrium from mechanical engineering and classical economics, gradually abandoning the search for a relationship between macroeconomic measures, or the exploration of new technologies. Instead, they focused on the issue of national innovation systems (using a systemic approach, or the analysis of the innovation process at the organizational or institutional levels) as a process not only technical but, mainly, social, characterizing political and learning features. Progressively, starting from an invention perspective, as in Cebon, Newton, and Noble (1999) ...the *utility of an invention in the production of new products or services, or in improving the existing ones, or in improving the way they are produced or distributed*, the orientation has democratized itself, dropping the requirement of absolute novelty, as in Damanpour (1984) ... *the implementation of an idea produced or adopted regarding a product,*

artifact, system, policy, program, or service that is new to the organization when it is adopted and, recently, the tendency is to reinforce the direction to the customer and the market, as Coakes and Smith (2007) refer ... *to introduce the right products at the right time, in the right markets with the adequate distribution network and then continue to update, optimize, and remove them when necessary*.

As for the various approaches to identify the different types of innovation, either separating the adoption of products and processes from its development (Cebon, et al., 1999) or, in a more classical way, distinguishing product or process innovations, most authors agree (Adams, 2006) that the innovation capacity or organizational innovation, is a third important type of innovation, representing the potential of the workforce to promote changes in the organization's benefit. As Huhtala and Parzefal (2007) mention, ... *to remain competitive in the global marketplace, organizations need to develop continuously innovative and high quality products and services, and to renew the way they operate, based on the continuous ability of its employees to innovate*. Similarly, and although innovation can take place through the adoption or development of a product or service, available through investment in R&D or technology acquisition, only by creating and sustaining a creative workforce can the organization develop a potential susceptible to overcome problems and difficult situations, which cannot be solved only through investments (Cebon, et al., 1999). And although it is true that the use of the innovative potential of the workforce is not reflected, in general, in radical innovations (Love & Roper, 2004), it should be understood that it is in small incremental innovations that the main innovative potential lies, occupying today more than 80% of every innovation produced. This innovation is directly linked to forms of collaboration that are increasingly on the basis of innovation (Uzzi &

Spiro, 2005). And this collaboration is critical to the kind of innovation that is being able to do more with less (Prahalad, 2010), increasingly the watchword in the business world.

But the creative potential of the workforce is not limited to team projects. It is also related to the ability of retaining and developing creative employees and managers (McAdam & McClelland, 2002) and, at the same time, providing an environment of trust where everyone feels free and interested to contribute to the organization's success. Such features as the increasing complexity of work, the employees autonomy and time constraints, along with a reduced organizational control (decision-making, information exchange and reward systems) encourage the creativity of employees (Adams, 2006). However, this is not enough to make people want to collaborate in organizational effectiveness. For example, a supportive leadership climate, incentives to knowledge creation and to group processes fostering creativity, may help success (Unsworth, 2005). Creative people, managers or employees, may become more committed with their work and organization if top management values their work and ideas. In fact, according to a survey published by the Gallup Management Journal (Hartel, Schmidt, & Keyes, 2003), employees involved with the organization are more likely to "think outside the box" and produce ideas, rather than less committed employees, and they are also more receptive to new ideas. This research found that committed people tend to find and propose new ways to improve the work and business processes, which may suggest that the more creative people have a better understanding of the organizational processes, as they are in a privileged position to identify and define problems. However, it would be erroneous to think that the organization's creative potential may increase only by hiring new talents, because a new talent alone will not be very useful, or his or her usefulness will not last for long. The creative talent needs other less creative, to comment, sell, adopt, and implement the ideas he or she produces. So the secret of

creative management is, quite simply, to recognize and promote the existing talents, wherever they are and in any way they manifest themselves.

To some extent, this can be achieved by raising the importance of creativity in the organization and providing a system through which individual potential may be channeled into a cost effective innovation. This approach views innovation as a process that involves the entire organization and not only the result of technology adoption, investments, research departments of R&D or new organizational designs. And is more appropriate to the psychological framework, in which the individuals and groups have the leading role. Wheatley (1992) advocates that *the literature on organizational innovation is rich in lessons...describes processes that are also prevalent in the natural universe*. Innovation is fostered by information gathered from new connections; from insights gained by journeys into other disciplines or places; from active, collegial networks and fluid, open boundaries. Innovation arises from ongoing circles of exchange, where information is not just accumulated or stored, but created. Knowledge is generated anew from connections that weren't there before.'

The Measurement of Innovation

Another one of the most widely discussed issues concerns the measurement of innovation and the accurate measures needed in this action (*If you can measure it, you can manage it*, as Drucker says). Indeed, these attempts to measure innovation, expose the weaknesses, shortcomings and contradictions existing in the actual definitions and identified types of innovation. If it is rather easy to develop metrics regarding product innovation (as the number of new products / services launched in the market over the past 3 / 5 years; the life cycle of a product; percentage of return due to new products), in connection with research or not (e.g. investment in R&D, number of patents, percentage of the total budget allocated to research,

number of employees working in R&D), it becomes much more difficult when it comes to processes (e.g. projects submitted, ideas collected, training, formal structures of innovation, changes in marketing strategy, distribution or sales) or services (Miles, 2005). Kline and Rosenberg (1986) believed that models that depict innovation as a smooth, well-behaved linear process, do not specify the nature and direction of the causal factors at work. Innovation is complex, uncertain, somewhat disorderly, and subject to changes of many sorts. Innovation is also difficult to measure and demands close coordination of adequate technical knowledge and excellent market judgment in order to satisfy economic, technological, and other types of constraints - all simultaneously. The process of innovation must be viewed as a series of changes in a complex system not only of hardware, but also of the market environment, production facilities and knowledge and the social contexts of the innovation organization.

One possible option is to develop more measures, intended to cover more aspects linked with innovation. However, the simple action of introducing more measures does not mean necessarily that the measure will turn more objective, but even if it does, it will not necessarily clarify the relationship between innovation and the global business results - the main question in innovation discussion. Actually, even when we speak of the so-called indicators of return on investment (ROI - Return on Investment Metrics), as opposed to those measuring exclusively the input (e.g. R&D), the relationship input-output, regarding the investments and the products, it is not easy to obtain satisfactory data, as Cebon et al. (1999) explained. Let us consider, for example, a popular measure like the return coming from the sale of a new product. The product manager may prefer to make a quick and simple change to an existing product, calling it a "new product", rather than to invest years of research into something truly new that, in addition, could fail to provide the measures he needed to meet management requirements. We need to remember

that, nowadays, almost everything in the companies is determined by financial measures (revenue, operating margins, cash flow, costs, new markets), although any indicator exclusively financial is incomplete when it comes to measure innovation.

If we do not seek only the financial measures, related to company results, the task will turn much more comprehensive. Indeed, many intangible measures such as employee or customer satisfaction, training in innovation tools, skills acquired, or the existence of a formal system of idea management, can be much more important than the objective metrics, although not allowing a direct relationship with profits. In this regard, Armbuster, Bikfalvi, Kinkel & Lay (2008), report different type of surveys attempting to measure the levels of organizational innovation. While developing consistent measures, the researchers find no significant relationship between these indicators and other more objective, such as productivity. They also consider that this is not a valid or safe process to distinguish innovative from less innovative companies, since they did not find any criteria which may remain stable for a significant period of time. Furthermore, if we expand our analysis to knowledge - the real basis of all innovation - we discover that most of it is unknown in the company, as in the sentence reported by Hagel III, Brown & David (2010), *…if HP knew what HP knows, HP would be three times more profitable*. Therefore, we may question the usefulness of measuring innovation, an issue that has received so much attention in national and international forums, and has been considered one of the most important measures to compare and classify the countries' economic activity (OECD - Oslo Manual, 2005; Innovation Europe Scoreboard, 2011). If the objective measures of innovation do not have a direct relationship with the company's final results, as we saw previously, and if the criteria to measure organizational innovation shows weak validity and reliability levels, what is the interest of measuring innovation?

All research in innovation tries to understand the way to adapt to the introduction of new technologies, or to develop new products and processes, or to manage the circumstances determining the organizational change, in a systematic search for the structure capable of continuous problem solving and innovation. Reflecting again with Smith and Coaker (2007), only innovation can make the company continue to optimize the introduction of the right products, at the right time, in the right market, with the right distribution network but, as Christensen (2003) remembers, "right" does not mean "correct management", especially when dealing with disruptive innovations. Thus, being innovation the most important organizational process that includes all the others, it becomes critical to assess its pace and intensity, i.e. it is important to measure it, providing the measure does not turn into an end in itself. Only through the process of innovation or, more specifically, the so-called *Innovation DNA* (Tucker, 2008), i.e. the employees' ideas, knowledge, commitment and innovation skills, will it become possible to gain the required competitiveness in the market, indispensable to the organization's survival. As the only important thing are the results, not the process, it is important to establish the link between innovation and the different measures related to profits, costs, productivity and employee satisfaction.

Without questioning the importance this search for criteria has to management control, the most significant issues in the innovation study rely in improving the essence of an organization of persons, mediated by technology, towards a common goal. And we should not forget that creativity, rather than innovation, is the mainspring of the organizations and that an company can only be considered truly creative when its employees get to do something new and potentially useful, in a continuous way and without being taught, or shown how to achieve it. As Robinson and Stern (1998) mention, each employee knows something, only known by him or

herself or, at most, by one or two colleagues, but only when the organization manages to share this potential, the term "creative" becomes accurate. Such sharing should be directed to the discovery of new ways of creating value - the true heart of the innovation (Shapiro, 2001). That is why the organizations that do not take a collaborative approach will be seriously constrained in the current economy.

Collaborative Organizations

Founded in the internet (as Wikipedia, TripAdvisor, Skype, Napster, Google, Facebook, Twitter, Craigslist, eBay, Amazon), the collaborative organizations (where several agents, including the customers, collaborate in decision-making) began to impose on the business scene (Brafman & Beckstrom, 2006) as decentralized organizations, not focused solely on profit but on the willingness of people to contribute to projects in which everyone can benefit. They operate in such a way that has made it possible to abolish or, at least, mitigate the role of power, reducing considerably the hierarchical levels. Examples such as General Motors (Brafman & Beckstrom, 2006), Semco (Ghoshal & Bartlett, 1994), WL Gore & Associates (Gladwell, 2000), Natura (Ibarra & Hansen, 2011), and HCL Technologies (Nayar, 2010) have provided interesting case studies for this other form of organizational setting, based on decentralization, team-based organization, elimination of vertical and horizontal barriers, and development of collaborative systems, based on projects. This organization based on projects foster the improvement of the so called co-workers' *alignment*, that is to say, the employees' interests and actions become aligned with organizational objectives, defined by the management, around common projects, resulting in increased productivity, satisfaction and group cohesion.

The idea of collaborating in business has earned new breath with the Internet and the social networks, by providing opportunities for linking people and for having access to

information. Here collaboration means connecting people, ideas, and resources that would not bump into one together, either through people – the "connectors" (Gladwell, 2000) – design of the working space (Fayard & Weeks, 2011), organizational design (Cherkasky & Slobin, 2008) or the Internet (Brafman & Beckstrom, 2006).

Facilitating communication has always been one of the major goals in organizations, and enormous efforts have been dedicated to designing charts, spaces, and software that could push people to interact more, at least for working purposes. Who does not remember the "open space" offices, designed to break organizational silos, but that failed to understand that people need privacy? In fact, as Fayard and Weeks (2011) explain, although interactions decline exponentially with the distance between offices (the Allen curve), organizations need to balance privacy and encounter, by providing spaces, time and opportunities for people to meet informally, when they feel like. People tend to get stuck in their own spaces, or to interact only with others with similar backgrounds, or that they know well, which does not facilitate the development of new perspectives and ideas (Ibarra & Hansen, 2011). Even using social networking is not enough, as people need face to face encounters. In fact, companies even tried to rely on people from the generation Y (born mid-1070s to the early 2000s), who grew up with more habits of sharing knowledge, but other problems prevented the success.

The kind of problems that prevent people from collaborating does not even come from the human nature itself. In fact, in a company survey described by Benkler (2011), only 30% behaved in selfish terms, while 50% behaved cooperatively and the remaining 20% were unpredictable, and could become collaborative if treated fairly by management, and addressed to intrinsic motivators. The reasons for isolation have to do with the same kind of reasons that prevent creativity in organizations, which have mainly to do with control of decision making,

information and the reward systems (Mclean, 2005). These difficulties in communication and collaboration may be better understood with a metaphor addressing Alice's fairy tale (Sousa, 2012).

Alice wonders why people follow rules and regulations that are seemingly meaningless, and they do not even question those rules! The Mad Hatter thinks that people develop a range of activities and routines that make sense for them but to the outside observer seem absurd. He believes that these things make no sense within the system as a whole. He knows that organizations develop sometimes a private reality which has little to do with the real world, isolating it in exactly the same way a person isolates from others.

Both characters are afraid of the Queen of Hearts, who only has exaggerated and distorted thoughts about what should be done. She asks rhetorical questions, with no real interest in the answers. It is true that a possible defense would be the humor that helps make things more flexible, but who dares to look unconventional and defend the respect for the power of nonsense? The Cheshire Cat knows that those who laugh at the idea in force are subject to beheading.

Within this framework of behavior, oblivious to reality and subject to the unquestionable will of power, people isolate themselves and reduce their level of commitment to working together in the collective future. Indeed, Alice reinforces this view by pointing out that she is so involved in her activities that she does not find time to collaborate with other people. The Mad Hatter reinforces this by saying that such collaboration does not just happen because people are not willing to drink tea together. The White Rabbit helps by saying that the culture of competition is gaining ground to collaboration; people are being rewarded for arriving first, or being stronger. As Alice says, people have forgotten the feeling of flow for collaborating together.

In the end, everyone knows that it is not exactly the lack of time that motivates this to happen. There is plenty of time. For example, consider those boring meetings in which Alice wakes up from time to time, only to conclude that it is best to go back to sleep. These meetings where the Flowers never agree with each other because they all say something different, making it impossible to achieve mutual understanding. The White Rabbit also thinks it is because they complain that they do not have time, are in a hurry and, therefore, take much longer than the necessary if one stops to listen to each other.

All this means that Alice never knows exactly who is sincere and who is not. She does not know who to trust in order to collaborate.

This will of management to exert control may not even be an open intention to exert power, but mainly the illusion that they are in a better position to view the landscape, and better situated to make decisions that will benefit the whole organization, as in the case description

adapted from Vineet Nayar's book "Employees first, costumers second", picturing ways to decrease the influence of position and increase the influence of expertise in decision making..

HCL Technologies is a large company in the area of information technology and software, created in India, in 1976, as a start-up. It grew rapidly and became a global company, currently operating in 31 countries. It has 85,000 employees of various nationalities and guarantees revenues of 6.2 billion dollars.

In 2005, Vineet Nayar was named President of HCLT, and with the support of the company founder, began a process of change which he called "employees first, customers second," a philosophy of transparency and trust that sought to reverse the pyramid and create a unique organizational culture, focusing on the employees.

Without any pre-defined plan, with the objective of placing the company among the first and gaining market share, he began his leadership, visiting all the departments of HCLT and hearing a significant number of employees. He realized that delegating power to employees (those who were actually responsible for the creation of value) could provide a better service to customers, since *enthusiastic employees enthusiasm the customers*.

Relying on the transformers, managers and staff more open to change, he started by creating a platform with all the financial information of the company, so that each worker could, at any time, know the objectives and the results, not just of his or her own team, but of the whole organization. He also created an online forum, an open site where everyone could ask a question, which would always be answered by the leaders. Later on, he found out that, along with the increase of confidence and proximity to the leadership team, the forum allowed a reflection and information share even with the workers who, although not directly communicating, could contribute to problem solving.

The performance evaluation system was also changed: from a 360º evaluation (which did not include any criterion related to the creation of value) to an open process, with each person (leader or not) being evaluated by any employee, granting that the assessment was fully available to any member of the organization. Anyone could assess a leader having influenced positively or negatively his or her action. This evaluation process was seen as a development tool for the leaders, helping them to be the aware of their own strengths and weaknesses, thus allowing for continuous improvement and accountability. A manager was evaluated mainly by the number of assessments and the functional distance from evaluators, thus inferring the extent of his or her influence.

Vineet Nayar, conscious of the need to promote co-workers' deep involvement around their beliefs, ethical values and passions, as a way promote responsibility, created communities. Initially these virtual communities joined together around different areas, such as health and security, art, music, social responsibility, and further on, in the core business areas, encouraging the production of valuable ideas for new business. This concept was extended to customers who also produced hundreds of valuable ideas.

In the end, he set as a goal the self-governed company, thus accomplishing a total change in the power structure that will allow the system to keep on successfully, even when the presidents change. Idealism? Or a must for a company's future, more productive and respectful of the human values?

Vineet Nayar (2010). Employees first, customers second. Boston: Harvard Business Press

it seems necessary to make managers seem more vulnerable to the company.

Semco is the name of a large Brazilian company, producing electronic products, which was close to bankruptcy. At that time, the company was putting a lot in R&D, but some studies revealed that, in order to maintain such investments, it should hold at least 6% of the market share; instead Semco had less than 1%.

In 1989, as a consequence, the leadership changed; the CEO was replaced by the director of one of group companies, who had devoted his entire career to Semco. Intending to cope with the difficulties, the new administrator and his team proposed a 20% staff reduction, a cut of 50% in R&D, and to close some factories, with the consequent product elimination.

This decision changed completely the way of thinking and acting in the organization. The Administration adopted participative management practices and established regular meetings where they established 4 main goals to be implemented throughout the organization, from top to bottom. These goals were defined as projects, which included performance standards and an entire monitoring program: one of them, the project "time to market", aimed at reducing the development cycle for a new product; another was designed to reduce the time needed to deliver the product; the project "customers' satisfaction" was seeking to improve the response to customers and, finally, the project "portfolio choice" sought to decrease the number of products from the list of 15,000 items. The specific tasks related to each project were implemented by several teams who gradually gain confidence in the possibility of success and of achieving excellence.

The change process was closely monitored by a consultancy team who interviewed managers and employees at the different levels. The content analysis of numerous interviews, conducted over 3 years, allowed to extract 4 dimensions associated with the process of change:

- **Discipline**, associated with the collective awareness of the initial company's situation and with the definition of clear objectives, which led to the development of a new accounting system allowing for individual accountability; a system, allowing to give a quick feedback of the activities carried out during one working cycle, was implemented; appropriate sanctions, not accepting apologies or arbitrariness (the fact that managers in power positions had been fired, served as an example and guaranteed equity).
  - **Flexibility**. People began to define their own goals and expectations, which proved far more ambitious than in the past. The content analysis showed that three attributes contributed to this dimension: the establishment of shared ambitions; the emergence of a collective identity and the development of an individual feeling of making an important contribution. The regular meetings and the participation in the projects mentioned above were an important factor of identification with the organizational goals.
  - **Confidence**, built around the perception of justice and equity in decision-making processes, organizational commitment and people's involvement in the company's projects, and the increased perception of proficiency developed by the co-workers at all organizational levels.
  - The perceived **Support** increased as the organization shifted from a control orientation to an help and development orientation, giving the co-workers greater freedom and autonomy to take initiatives. The free access to resources and information proved to be an important to this dimension definition.

The development of these four dimensions promoted the emergence of co-workers' initiative and cooperation, which proved to be aligned with the organizational goals, and gave rise to organizational learning.

Sumantra Ghoshal & Christopher Bartlett (1994). Linking organizational context and managerial action: the dimensions of quality managemen. *Strategic Management Journal, 15*, 91-112.

revealed team-based practices were associated with:*66% return on sales; 20% higher return on assets (ROA); 20% higher return on investments (ROI); 14% higher return on quality; 14% higher return on equity (ROE);1.700% higher return on investors and 257% higher market-to-*

book ratio. If it were not for other reasons, these would seem enough to justify a progressive move towards collaboration, which means to engage the minds and hearts of their members and to create effective relationships across boundaries.

Besides trying to move the whole organization, as a whole, towards a collaborative posture, either by a project-based, or a team-based approach, which might prove real difficult in the present (e.g. Beyerlein reports that 74% of U.S. workers are not engaged in their work), companies might either create, or reinforce, the innovation process, or develop networks and interactions.

The best idea management software will not be enough to make the best ideas to cross organizational silos, make them benefit from peer review (Hellstrom & Hellstrom, 2002), and visible throughout the network (Bernoff & Schadler, 2010). First of all, there must be a process of idea generation and mobilization, from which the advocacy and screening instruments used may allow the best ideas to be experimented and turned into innovations. This requires the existence of a centralized unit to commercialize inventions and, as Desouza et. al. (2009), explain, other structures to make its diffusion (generating buy-in and acceptance) and implementation (structures, maintenance and resources). This innovation process is mostly a discipline of generating, realizing, and evolving ideas that improve the business and the costumer experience but aiming at innovation for its own sake does not provide collaboration or creativity. The creative requirement lies directly in management control bias, already described.

Creating value networks (inter-organizational networks, linking together firms with different assets and competencies, and that attempt to respond to market opportunities – Konsti-Laaso, Pihkala, & Kraus, 2012), is another initiative aimed at business innovation by collaboration, which includes the costumer as a network member.

Final Considerations

In this article we have tried to maintain some coherence in presenting the concepts of creativity and innovation in organizations. Usually the researchers with different scientific affiliations, present the developments in the study of creativity and innovation in a rather atomist way, the former seen mainly as related to personal development and the later as pertaining to the business sector. As a consequence of this separation, we often find attempts to merge both concepts, leading either creativity to be "dragged" to the business side, or innovation to be forced into personal development, through team work techniques, attempts to improve the creative climate or others, which will always result in a partial view of the whole process, independently of the results.

In spite of our attempt to balance the weight given to both concepts, we are aware that we made some choices revealing only a part of the whole complexity. Indeed, we omitted the development of the psychological study of creativity, including issues related to motivation and divergent thinking, as if we were not aware of its importance. As for innovation, we have chosen not to deal with the multiple interpretations of the concept, or classifying typologies, and favored the development of a constant connection with creativity, especially when speaking above the individual level. Particularly, in developing the link between creativity and innovation at the organizational level, and in highlighting the value of individuals, when it comes to organizations, we tried to maintain the principle of the primacy of creativity over innovation, i.e., the primacy of the individual (creativity) over the business (innovation), well attuned with the *employee-driven innovation* (Smith, Kesting, & Ulhøi, 2011). We regret for not having the opportunity to develop the issues of the intellectual capital and knowledge management (Nahapiet & Ghoshal, 1998; Adler & Kwon, 2002), among others, due to restriction tied to the size of the article.

We have defined creativity as resulting from the relationship between the creator and its creation, in other words, we consider it is the attribution process that allows the distinction between the two constructs (creativity and innovation), thus emphasizing the cognitive and emotional processes when speaking of creativity, and power and communication when it comes to innovation. When focusing the organizational level, we emphasized the external attribution process, without any reason now to separate the concepts of creativity and innovation as, in our opinion, creativity is always an individual process. We do not deny the existence of "creative groups" or "creative organizations," "creative industries" or "creative cities" and, somehow, we prefer these designations to those using the term "innovation", as we understand that the group must gather the creativities when pursuing something that others may consider unique and useful, rather than unite individual only interested in their own creativity. Let us remember, however, that the term "creative" should refer to the conditions given to the individuals to express and develop their creativity and not to the fact that it contains innovative products or processes.

At the organizational level, we gave primacy to the concept of "organizational innovation", which also appears linked to administrative, ancillary or business innovation (Rowley, Baregheh, & Sambrook, 2011), for three main reasons. The first, related to the lack of clarity in the distinction between product and process, either in the adoption or development. Secondly, the increasing tendency to focus on services (with or without products), and the emphasis given to improvements at the expense of radical innovations or, in other words, the tendency to make radical innovations by associating small product transformations and new services, thus ending with a disruptive business concept. And finally, we consider that it is

around organizational innovation that we achieve the best fusion between creativity and innovation.

This option has disrupted the traditional view, which associates the concept of organizational innovation to changes in the organizational structure, taking as dependent variable some new practices (marketing, sales, distribution, markets), or new forms, or even changes related with the evolution or development (Lam, 2005). We prefer to place the organizational innovation within the organization as something systematic and involving everyone, usually organized in team projects, properly framed by the management, also integrating external collaboration such as *co-creation* or the *open innovation*. Organizational innovation is an intentional process and should be part of the work of each co-worker, along with routine work; we can measure its intensity by the results, such as processes and products profitable for the organization. It is an interactive process involving multiple agents, resulting in learning that will become part of the company's social capital and, so to speak, of its ability to continuously generate innovation. Or, as Morgan (1997) stated, its way to organize in socially based networks, norms, generalized trust and cooperation that facilitates coordination and cooperation for mutual benefit. This concerns an alternative kind of management we may find in collaborative organizations.

We tried to emphasize the importance of finding objective measures to determine the impact of innovation on the organizational results, and have testified the difficulty of such a task, especially in the service sector. But if the execution is difficult, it does not mean we should abandon it; it only means that measuring should not be an end in itself, rather one among other actions intending to produce something different. It should especially avoid classifying an organization as innovative or non-innovative. Although the search for such classification is

inevitable for most situations, it is the market itself the one who may or may not require the certification, as it happens with quality, environment, etc.. But we all know it is not the certification that will turn the organization more innovative, although it may be a normal corollary to the effort. It also happens with the innovation premiums flourishing in state agencies and business associations.

If we really want to understand the innovative dimension of an organization, we only have to ask their key actors: if either customers, consumers or the market have a favorable perception of the innovative characteristic of an organization, we can be sure that there is a high probability for it to be true, and if this matches the employees' opinion (overcoming the biases of espoused theories - Argyris, 1999), then we can be sure that it is indeed an innovative organization. And it is worth acknowledge the organization's product: to have an innovative product is different from being an innovative organization, since the former can be brief and transitory, while the second designation supposes the organization has an extensive history of accomplishments and practices before it can deserve the name of "innovative".

Regarding the process of change, the main message that we want to leave in this text, is that the real capacity to change an organization is the ultimate skill of a high level leadership. We are not referring to changes in structure, technologies or markets but the one related with the people's beliefs in the domains of work, social and client relationships. Organizations may engage in intensive training, sophisticated methods, technologies, disruptive products, but if the management does not have the capacity to generate global changes, able to persist over time, innovation will always turn to be a temporary success in the market, certifications or awards.

Finally, we addressed collaboration in business, starting with Internet and the social networks-based companies, which provide opportunities for linking people and for having access to

information. Here collaboration means connecting people, ideas, and resources that would not bump into one another normally. These decentralized organizations, not focused solely on profit but on the willingness of people to contribute to projects in which everyone can benefit, operate in such a way that has made it possible to abolish or, at least, mitigate the role of power, reducing considerably the hierarchical levels. Examples have provided interesting case studies for this other form of organizational setting, based on decentralization, team-based organization, elimination of vertical and horizontal barriers, and development of collaborative systems, based on projects, fostering the improvement of management and co-workers' alignment, resulting in increased productivity, satisfaction and group cohesion. And, then, the final question we would like to provide a positive answer: will collaborative organizations be the future type to which all organizations shall evolve?

While studying the whole process, we found ourselves facing the fact that the researcher is highly dependent on management. And some bitter flavor remains as one realizes that although he can advise, intervene or even achieve partial or temporary results, in the end, only those who have the responsibility for leading the destiny of an organization can materialize on the field, the desires of those who theorize. This leaves the researcher hopping to be lucky enough to find the agents who will provide the raw material from which he can learn in order to retrieve to others the knowledge he collects. This is not as simple as it seems, for the investigator must be able to identify the relevant examples from which he can learn or, in other words, he must be able to maintain a creative attitude about the reality, not hesitating to reject what he already knows in the benefit of a new knowledge.

It is precisely in the areas of organizational innovation that the psychologist is more likely to achieve this aim. Not only because the approach to the subject requires one to

acknowledge different interpretations and scientific backgrounds, such as economics, management, engineering or technology, but also because in no other field of organizational behavior will it be required such a perspective of effectiveness as in organizational innovation. Indeed, either the psychologist is able to suggest something that will result in a real improvement for the business, or she will remain a friendly and curious entity, which is allowed to work, providing she does not bother the company too much. Therefore a synthesis of the most important subjects in organizational psychology should be provided, since creativity and innovation drag all the understanding occurring beyond the traditional areas of human resource management.

And, yes, of course, we believe that collaborative organizations represent the future, in terms of development.

References

Adams, R. (2006). Innovation measurement: A review. *International Journal of Management Reviews, 8* (1), 21-47.

Abele, J. (2011). Bringing minds together. *Harvard Business Review*, July-August, 86-101

Adler, P. & Kwon, S. (2002). Social capital: Prospects for a new concept. *Academy of Management Review, 27*, 1, 17-40

Altshuller, G. S. (1996). *And suddenly the inventor appeared: TRIZ, the Theory of Inventive Problem Solving*. Worcester, MA, USA: Technical Innovation Centre.

Amabile, T. (1983). *The social psychology of creativity*. New York: Springer-Verlag.

Anderson, N., De Dreu, C. & Nijstad, B. (2004). The routinization of innovation research: a constructively critical review of the state-of-science. *Journal of Organizational Behaviour, 25*, 147-173

Argyris, C. (1999). *On Organizational Learning*. Oxford: Blackwell Publishers.

Armbruster, H., Bikfalvi, A., Kinkel, S. & Lay, G. (2008). Organizational innovation: the challenge of measuring non-technical innovation in large scale surveys. *Technovation*, 28, 644-657

Baer, J. (1997). *Creative teachers, creative students*. Boston, M. A.: Ally & Bacon.

Basadur, M. (1987). Needed research in creativity for business and industrial applications. In Scott G. Isaksen (Ed.) *Frontiers of creativity research: Beyond the basics*. Buffalo, NY: Bearly Limited

Basadur, M. (1994). *Simplex: A flight to creativity*. Buffalo, N.Y.: The Creative Education Foundation

Basadur, M. S. (1997). Organizational development interventions for enhancing creativity in the workplace. *The Journal of Creative Behavior*, 31(1), 59-73.

Benkler, Y. (2011). The unselfish gene. *Harvard Business Review*, July-August, 77-85

Bernoff, J. & Schadler, T. (2010). *Empowered: Unleash your employees, energize your costumers, and transform your business*. Boston, MA: Harvard Business Review Press

Beyerlein, S., Freedman, C., & Moran, L. (2003). *Beyond teams: Building the collaborative organization*. New York: John Wiley & Sons

Brafman, O. & Beckstrom, A. (2006). *The starfish and the spider*. London: Penguin

Buijs, J., Smulders, F. & Meer, H. (2009). Towards a more realistic creative problem solving approach. *Creativity and Innovation Management, 18*, 4, 286-298

Burns, T. & Stalker, G. (1996). *The management of innovation*. New York: Oxford University Press.

Cebon, P., Newton, P. & Noble, P. (1999). *Innovation in organizations: Towards a framework for indicator development*. Melbourne Business School Working Paper #99-9, September.

Checkland, P. B. & Poulter, J. (2006). *Learning for Action: A Short Definitive Account of Soft Systems Methodology and its Use for Practitioners, Teachers and Students.* Chichester: Wiley.

Cherkasky, T. & Slobin, A. (2008). Innovation in organizations in crisis. In T. Lockwood & T. Walton (Eds.), *Corporate creativity: Developing an innovative organization (Chapter 19)*. New Yor: Allwood Press

Christensen, C. (2003). *The innovator's dilemma*. New York: Harvard Business School Press

Coakes, E. & Smith, P. (2007). Developing communities of innovation by identifying innovation champions. *The International Journal of Knowledge and Organizational Learning Management, 14,* 1, 74-85

Csikszentmihalyi, M. (1991). Society, culture and person: a systems view of creativity. In R. J. Sternberg (Ed.). *The nature of creativity: Contemporary psychological perspectives* (pp. 325-340). Cambridge, NY: Cambridge University Press.

Csikszentmihalyi, M. (1999). Implications of a systems perspective for the study of creativity. In R. S. Sternberg (Ed.). *Handbook of creativity* (pp. 313-339). NY: Cambridge University Press.

Damanpour, F. & Evan, W. (1984). Organizational innovation and performance: the problem of "organizational lag". *Administrative Science Quarterly, 29,* 392-409

Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal, 34,* 3, 555-590.

De Bono, E. (1985). *Six thinking hats*. NewYork, NY: MICA Management Resources. Ou 1965?

Desouza, K., Dombrowsky, C., Baloh, P., Papagari, S., Jha, S., & Kim, J. (2009). Crafting organizational innovation processes. *Innovation: Management, Policy & Practice, 11,* 6-33

Fayard, A. & Weeks, J. (2011). *Harvard Business Review*, July-August, 103-110

Freeman, C. (1982). *The economics of industrial innovation* (2nd ed.). London: Routledge

Ghoshal, S. & Bartlett, C. (1994). Linking organizational context and managerial action: the dimensions of quality of management. *Strategic Management Journal, 15,* 91-112

Gladwell, M. (2000). *The tipping point: How little things can make a big difference*. London: Little, Brown Book Company

Gordon, W. J. (1961). *Synectics: The development of creative capacity*. Oxford, England: Harper

Hagel III, J., Brown, J. & Davidson, L. (2010*). The power of pull*. New York: Basic Books

Hartel, J., Schmidt, F. & Keyes, L. (2003). *Well-being in the workplace and its relationship with business outcomes: A review of the Gallup studies* (205-224). Washington D.C.: American Psychological Association.

Hellstrom, C., & Hellstrom, T. (2002). Highways, alleys and by-lanes: Charting the pathways for ideas and innovation in organizations. *Creativity and Innovation Management, 11*, 2, 107-114.

Ibarra, H. & Hansen, M. (2011). Are you a collaborative leader? *Harvard Business Review*, July-August, 68-76

Innovation Union Scoreboard 2011 (2012). Retrieved in May 2012 at http://ec.europa.eu/enterprise/policies/innovation/files/ius-2011_en.pdf

Isaksen, S. G., Dorval, K. B. & Treffinger, D. J. (2000*). Creative approaches to problem solving: A framework for change (second edition*). Buffalo, NY: The Creative Problem Solving Group.

Johnson-Laird, P. N. (1993). *Human and machine thinking*. London: Lawrence Erlbaum Associates.

Kanter, R. (1983). *The change masters*. New York: Simon & Schuster.

Kasof, J. (1995). Explaining creativity: The attributional perspective. *Creativity Research Journal, 8*, 311-365.

Kasof, J. (1999). Attribution and creativity. In M. A. Runco & S. R. Pritzker *Encyclopedia of creativity* (pp. 147-157). New York: Academic Press.

Kilbourne, L. M., & Woodman, R. W. (1999). Barriers to organizational creativity. In R. E. Purser & A. Montuori (Eds.), *Social creativity* (Vol. 2*)*. Cresskill, NJ: Hampton Press, Inc.

Lam, A. (2005). Organizational innovation (Article 5). In J. Fagerberg & D. C. Mowery, *Oxford handbook of innovation*. London: Oxford university Press

Love, J. & Roper, S. (2004). The organization of innovation: collaboration, cooperation and multifunctional groups in UK and German manufacturing. *Cambridge Journal of Economy, 28*, 3, 379-395.

Ludwig, A. M. (1995). *The price of greatness*. New York: Guilford Press.

Konsti-Laakso, S., Pihkala, T., & Kraus, S. (2012). Facilitating SME innovation capability through business networking. *Creativity and Innovation Management, 21*, 1, 93-105

McAdam, R. & McClelland, J. (2002). Sources of new product ideas and creativity practices in the UK textile industry. *Technovation, 22*, 113-121.

McLean, L. (2005). Organizational culture's influence on creativity and innovation: A review of the literature and implications for human resources development. *Advances in Developing Human Resources, 7*, 2, 226-246.

Menaker, E. (1996). *Separation, will and creativity: The wisdom of Otto Rank.* London: Jason Aronson, Inc.

Morgan, K. (1997). The learning region: Institutions, innovation and regional renewal. *Regional Studies, 31*, 5, 491-503

Nahapiet, J. & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review, 23*, 2, 242-266

Nayar, V. (2010). Employees first, customers second. Boston: Harvard Business Press

OECD (2005). Oslo Manual. Guidelines for collecting and interpreting innovation data. Paris: OECD

Osborn, A. F. (1957). *Applied imagination*. New York: Scribners ou 1953?

Osborn, A. F. (1963). *Applied imagination: Principles and procedures of creative problem solving (3rd revised edition).* New York: Scribners

Parnes, S.J. & Noller, R.B. (1972). Applied creativity: The creative studies project: Part I – The Development. *The Journal of Creative Behavior, 6*, 11-22

Paulus, P. B. & Brown, V. R. (2003). Enhancing ideational creativity in groups: Lessons from research. In P. B. Paulus & B. A. Nijstad (Eds.). *Group creativity: Innovation through collaboration*. New York: Oxford University Press

Prahalad, C. K. (2010). Innovation's holy grail. *Harvard Business Review*, July-August, 133-142

Puccio, G. J., Firestien, R. L., Coyle, C. & Masucci, C. (2006). A review of the effectiveness of CPS training: A focus on workplace issues. *Creativity and Innovation Management, 15*, 1, 19-33.

Robinson, A. & Stern, S. (1998). *Corporate creativity: How innovation & improvement actually happen*. San Francisco: Berret Koehler Publishers

Rogers, E. M. (1983) *Diffusion of innovations* (3rd Ed.) New York: The Free Press.

Rowley, J., Baregheh, A. & Sambrook, S. (2011). Towards an innovation-type mapping tool. *Management Decision, 49*, 1, 73-86

Runco, M. (1998). Book review. *The Journal of Creative Behavior, 32*, 2, 92-95.

Sawyer, R. K. (1998). The interdisciplinary study of creativity in performance. *Creativity Research Journal, 11*, 11-21.

Schumpeter, J. A. (1934). *Invention and economic growth*. Cambridge: Harvard University Press

Shapiro, S. M. (2001). *24/7 Innovation: A blueprint for surviving and thriving in an age of change*. New York: McGraw-Hill

Simonton, D. K. (1995). Exceptional personal influence: An integrated paradigm. *Creativity Research Journal, 8*, 371-376.

Smith, P., Kesting, P. & Ulhøi, J. (2011). What are the driving forces of employee-driven innovation?. Centre for Organizational renewal and evolution, Aarhus School of Business. In Ileana Monteiro e Fernando Sousa (Eds.), *Proceedings of the 12th Conference on Creativity and Innovation* – ECCI XII (pp. 354-367).

Sousa, F.C. (2007). Still the elusive definition of creativity. *International Journal of Psychology: A Biopsychosocial Approach, 2*, 55-82

Sousa, F. C. (2012). The reality of business in a fairy tale. In J.P. Baumgartner (Ed.) *Report 103, 202*, 2 February

Spence, W. R. (1994*). Innovation: The communication of change in ideas, practices and products*. London: Chapman & Hall.

Stein, M. I. (1953). Creativity and culture. *The journal of psychology, 36,* 311-322.

Stein, M. I. (1993*). Moral issues facing intermediaries between creators and the public*. Unpublished paper.

Tucker, R. B. (2008). *Driving growth through innovation*. San Francisco-Berret-Khoeler Publishers

Unsworth, K. L. (2005). Creative requirement: A neglected construct in the study of employee creativity? *Group Organization Management, 30*, 541-560.

Huhtala, H. & Parzefall, M-R. (2007). A review of employee well-being and innovativeness: An opportunity for a mutual benefit. *Creativity and Innovation Management, 16,* 3, 299-306.

Uzzi, B. & Spiro, J. (2005). Collaboration and creativity: The small world problem. *The American Journal of Sociology, 111*, 2, 447-504.

West, M. A. & Farr, J. L. (1990). Innovation at work. In M. A. West & J.L. Farr (Eds.), *Innovation and creativity at work: Psychological and organizational strategies* (pp. 3-15). Chichester: Wiley & Sons.

Wheatley, M. J. (1992). *Leadership and the new science: Learning about organization from an orderly universe.* San Francisco: Berret-Koeller Publishers

Woodman, R. W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a theory of organizational creativity. *Academy of Management Review, 18,* 2, 293-321.

Woodman, R. W., & Schoenfeldt, T. (1989). Individual differences in creativity: An interactionist perspective. In Glover, J. A.,. Ronning, R. R & Reynolds, C. R.(Eds.). *Handbook of Creativity* (pp. 77-93). New York: Plenum Press.