Exploring the links between idea generation and motivation

Abstract.
The adoption of specific idea management programs is becoming a strategic asset for organizations as they are increasingly trying to adopt specific organizational solutions to detect, fertilize, evaluate and promote new idea generation within and across their boundaries. The centrality of ideas generation is linked to its vital characteristic of being the main source for new products, services, processes, and drivers of change. This papers deals with the controversial role of general organizational setting and closely focuses on the rewards mechanisms that can further nurture creativity. We submit that understanding of the motivational drivers as well as acknowledging the importance of the organizational settings for individual learning behavior and idea generation is crucial in order to distill the links between idea generation and incentive structures. Consistently, we will conduct a theoretical understanding of the phenomenon in order to explain how new ideas can be nurtured through the adoption of a routine system aligned with general human resource management policy.

Introduction
The adoption of specific idea management programs is becoming a strategic asset for organizations, as they increasingly try to adopt specific organizational solutions to detect, fertilize, evaluate and promote new idea generation within and across their boundaries [1, 2, 3]. Ideas for innovation are important for the long-term survival and competitiveness of firms, being the main source for new products, services, processes, and drivers of change. Firms continually look for new sources of ideas, by considering the organizational context as a mechanism for bringing "in" ideas from the external environment ("outside") or finding alternative ways to manage the internal resources. Kanter [4] defined "kaleidoscopic thinking" as the process of idea generation since it often involves the rearrangement of already existing pieces into a new whole. The sources of innovation can be found anywhere where it is possible to access information and new knowledge.

Since the translation of ideas into business processes and product/service innovation is vital for firms' sustainability, it is attracting the interest of a variety of scholars (e.g. [5]). Innovation may be considered as the implementation of ideas in useful business. As a consequence, we may have creativity without innovation but not innovation without creativity. The understanding of the link between innovation and creativity requires some focus on how the ideation process works. Amabile [6] argues that innovation is the successful implementation of creative ideas within each organization.

The topic itself has relevant implications and there is a consideration here of to what extent rewards affect the participation and performance of employees (internal contributors), considering the fact using different motivation profiles. Managerial practice concerning innovation management processes could benefit from the contribution of supervisors' behavior in governing new idea generation through the usage of rewards, formal recognition, and monetary incentives. In addition, a superior awareness of the counterintuitive effects of extrinsic incentives could help avoid some crowding-out effects.

This paper aims to critically analyze and assess the impact of extrinsic and intrinsic motivation on idea generation, both at an individual and team level, and to develop a framework within which to explore the necessary changes to be adopted by firms in managing idea generation. In doing so, this paper sees its ultimate aim as uncovering the dynamics of individual and collective motivation related to creativity, which is considered to be the main source for innovation. In particular, the paper explores the potential impact of incentives on individual and collective innovative behaviour.

We submit that understanding the motivational drivers as well as acknowledging the influence of the organizational settings on the individual learning behavior and idea generation is paramount in distilling the links between idea generation and incentive structures.

Given the correlation between individual motivation and the organizational context, we will be referring to Amabile's model that shows how the working environment influences individual creativity and above all employees' motivation [6]: creativity (C) results from the synergic combination of three main elements: employees' motivation (M), their

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professionalism (P), and the organizational context (O). As we will show later in building our framework, some experiences reported in the previous studies refer to the general concept of new idea generation without paying necessary attention to the internal dynamics occurring within firms [7]. Such a contextualization might take place in two different, thought correlated, directions. The first relates to innovative reward systems based mostly on non-monetary incentives which can boost individual creativity. To some extent, the social recognition of innovation might take some time overtake some monetary rewards [8]. The second aspect concerns the differential impact of reward systems on collective performance, since internal group dynamics and collinearity between individual motivation and contributions to team working can lead to unexpected individual reactions to rewards; e.g. switching from the assessment of the input/outcome ratio at the individual level towards the collective forces one to consider additional sources of complexity, such as the inclusion of equity. Furthermore, the move in focus from individual to collective entities calls for a systemic approach to the management of innovation.

This paper aims to depict a conceptual framework for understanding the generation of new ideas. Its structure is based on two sections. In Section 1, we briefly discuss the main organizational dimensions, spanning the ones related to the general organizational context (Information Technology, climate, routines) to the impact of human behaviour drivers, like motivation. The way such dimensions are illustrated in the section takes into consideration the interconnections between individual and collective forms of behaviors in regard to creativity. Furthermore, we will draw upon the research propositions that might explain the impact of creativity on such dimensions of creativity. Section 2 explains the general framework we propose to use to wrap up the dynamics of new idea generation, considering both individual and the collective (teams) levels of analysis. Finally, we reach some conclusions regarding the feasibility of the ideas submitted and propose a wider discussion that focuses on the possible operationalisation of future research activities on the subject, as well as on the managerial implications of a deeper understanding of its dominant dynamics.

SECTION 1: Creativity and the organizational settings

Information Technology and creativity

A relevant issue that can be linked to the diffusion of solutions of Information Technology (IT) is supporting the generation of new ideas, namely IT-based tools enacting the interaction among employees. Even when such technological solutions do not contribute to the creation of virtual communities, the mere existence of such possibilities can influence the behavioral conduct of people. This is the case regarding the combination of electronic communication tools, designed to support decision-making processes through analysis of alternatives, negotiating and voting [9, 10]. In particular, IT-mediated relations can lead to different actions from the face-to-face interactions to enabling or constraining cooperative forms of behavior [11]. Similar dynamics occur when competition among individuals is expected. Some side effects could also generate phenomena like production blocking, free riding, the sucker effect, and evaluation apprehension [12]. Moreover, the influence of IT-enabled solutions in innovation management generates new needs in terms of human resources systems and practices. Specifically, the whole process of idea generation should be deepened in a more general HR policy, embedding both reward systems and general innovation process analysis.

Proposition 1:
The availability of IT-mediated solutions might nurture the generation of new ideas through a more intense interaction among individuals.

Organizational climate and creativity
Organizations have high creative output characteristics and specific problems, which are not always categorized. Research shows that, for most organizations, the source of innovation take place within organizational boundaries [13], and the most significant source of ideas comes from employees [3]. In particular, it seems that most of new ideas for innovation are generated and diffused using a bottom-up approach, whereby managers help employees spend a part of their time sharing and discussing new ideas. The parallels between individual creativity and organizational climate are necessary to deepen the concept of corporate creativity mentioned by Lubart and Sternberg [14]. This study, albeit from different perspectives, argues in a similar way that the complexity arising from being unpredictable can be perceived as an opportunity for innovation, change and creativity. In fact, creativity is necessary for evolution, since it is mostly incremental [15, 16]. Innovation thus becomes the most significant moment of the creative process and the organization becomes not the place where new ideas are generated but rather the context in which you can put them into practice. Further the concept of creativity is often compared to "self-organization", meant as the ability of organizational units and individuals to originate and maintain relationships, interactions and links with the external environment to business with but also without the use of

macro-mechanisms of corporate governance. In fact, very creative companies grant autonomy in internal forces giving rise to the possibility of new forms, new structures, new modes and new products.

Andriopolus [17] summed up the ability of management to stimulate creativity within an organization in five basic ways: 1) culture, 2) climate 3) the organizational structure and systems, 4) leadership styles, and 5) knowledge / expertise. In this multi-faced scenario a complex system of equilibriums needs to be found, since the internal organizational context need to balance different contrasting pressures. On the one hand, the need for autonomy calls for forms of self-organization, whereas the maintenance of internal of homogeneity of task accomplishment and compliance to organizational culture still requires some general guidelines and hierarchical relations. To this extent, the parallel with clinical innovation could be exemplary. In such a context, innovative protocols are developed within some general guidelines and individual autonomy has boundaries in the mechanisms of self-responsibility, e.g. a clinician is free to experiment with completely unknown paths but, at the same time, he/she is called to carry the burden of any action being put into place.

Techniques and processes that facilitate and stimulate creativity emergence have grown rapidly [18, 19]. Despite the availability of different models and solutions, these techniques and processes seem to consist of "instructions, and manipulations, capable of arousing the creative potential of individuals namely when working with others, either face-to-face or mediated by computers" [20, p. 276]. Creativity flourishes when the organization encourages it, when employees are motivated to think and pursue new ideas, and when the organization provides employees with the resources they need to play with these ideas in generative ways [22, 23, 24]). Mainemelis [25] studied creative deviance in the evolution of new ideas, and observed that individual behaviors can be nurtured by personally convincing others of the validity of the ideas which produce stronger results than the organizational structural rules. The non-predictable effect of the interaction between organizational encouragement and individual convincing requires the adoption of a systemic approach and the consideration of employees of firms as creators and innovators.

Proposition 2: Climate and idea generation
The existence of a favorable (internal) climate could encourage the generation of new ideas if its constitutive (structural) elements are consistent.

Group structure and idea generation
In order to stimulate an effective form of enactment, managers may set up specific solutions for collecting employees' ideas at different organizational levels. In nurturing organizational creativity, it may be necessary to consider the following elements [26]: 1) individual contributions to innovation; 2) the importance of reciprocal influence among individuals; 3) the dynamics of social interaction within groups. In a different way to IT, which might impact on the way individuals refer to the other through virtual media, group structures impact both on individual and collective behaviors and eventually on performance.

The management's role thus becomes prominent in fostering and facilitating collective actions. In fact, the evidence shows that ideas arising from large and heterogeneous groups are more valid than ideas resulting from smaller and therefore more manageable groups. Since some people are more creative than others [7, 22, 24, 27], each individual chooses how to contribute to idea generation. This phenomenon has been theorized by Ajzen and Fishbein [28], in studying the human behavior within the framework of "reasoned action" and "planned behavior". These theories argue that the decision to behave in a certain manner is influenced by a member's attitude toward a behavior and by a member's comprehension of the norms and perception of the external environment. Individual characteristics, hence, play a large role in influencing whether someone chooses to contribute to the development of a new idea [29].

Some studies by Pisarra and Jesuino underlie the idea that interaction processes negatively affect the efficacy of face-to-face groups [20]. They analyzed three relevant phenomena: previous fear, social loafing (free riding) and blocking, concluding that blocking is the main cause of the decrease in efficacy of the face-to-face brainstorming. A recent study [30] examines the effectiveness of two different group structures: a) groups interacting in time and space, sharing a common experience based on information, and b) hybrid groups in which individuals begin working independently without interaction of any kind and lately end up in working together. The evidence shows that hybrid groups perform better than the others. In fact, in the hybrid structures each member can potentially access different knowledge and can deal with problem solving in different ways. In the second phase each member shares his/her findings from the individual phase in order to perform additional explorations together. An alternative group of configurations was analyzed by Kavadias and Sommer [31] that underlined how problem structure and team diversity might influence the quality of the best innovative solutions. They studied nominal groups (the same number of individuals generating solutions in isolation) as opposed to brainstorming [32]

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concluding that nominal groups perform better in dealing with specialized problems, even when factors that affect the solution quality exhibit complex interactions [31].

Team working can produce the relational continuity that is essential to ensure a form of routine to achieve high performance. Teams are based on building solid relationships that tend to resist over time based on frequent and ongoing interactions that allow the actors to meet, share and create common points of view, and important experiences.

As already noted, the switching of focus from individuals to collective entities (groups) requires further speculation on the subject. In terms of professionalism, heterogeneous groups achieve better results than homogeneous groups or individuals who work alone [33]. Lankau et al. [34] and other authors [35, 36] explain the reasons why team members can practice diversity of a non-task related nature (as gender-age-race) and lead in non-task conflicts, while individual diversity of a task nature (as work-education-function) leads to task conflict [37]. Nevertheless, heterogeneity and homogeneity do not spring the same effects on all the group configurations and tasks to be performed. In particular, although a limited amount of diversity is normally preferred, different types of diversity might have opposite effects.

The best results seem to be obtained when potential members, even if coming from different experiences or background, join the team by agreeing to team's goals and expectations [37] although they tend to be attracted to others with similar backgrounds, to share similar values, attitudes and interests. Ensely and Hmieleski [38] describe team effectiveness as the degree of collective efficacy in terms of group goals achievement. A particularly hostile situation to deal with is when task accomplishment relies on both convergence and divergence at the same time, e.g. in case of modular innovation. Team performance depends also on how members work. They may work together in time and space, or they may work as a hybrid structure, first independently – in a nominal group - then sharing their work together [30]. Considering Thompson's [39] concept of inter-task relations, in the case of sequential relations the transfer of knowledge between individuals flows with the path of collaboration. The situation in which individuals are bound together by mutual interconnections instead appears more difficult to manage.

In knowledge-creation teams, individuals contribute by exploiting their repertoire of skills, whereas the organization defines the strategies – that by definition affect and are affected by the situation – for using and combining such repertoires [40]. Thus, individuals' actions are very important for continuous innovation and improvement. Innovative work behavior [41] aims to achieve the initiation and intentional introduction of new and useful ideas, processes, products and procedures [42]. It differs from employees creativity, as stated by Amabile [6], because it also includes implementation. Implementation requires an intensive effort and a result-oriented attitude for organizations. Innovative work behavior can be engaged in, allowing employees to have more diverse views and influences that may help spark creativity. Perry-Smith and Shalley [43] develop propositions on the association between social relationship and the related construct of creativity.

The different configurations of the groups we have so far examined here explain how different combination of individuals can create internal organizational contexts in which the generation of new idea can blossom or perish according to the equilibriums towards which such contexts converge. Nevertheless, the analysis of the impact of different reward systems cannot ignore the link between creativity as an outcome and motivation as the main input of the innovation processes.

Proposition 3:
Group structure could favor the blossom of new ideas depending on the nature of the task and on the final goal of the organization.

Creativity and motivation
The understanding of the link between creativity and motivation needs to be explored through the analysis of how intrinsic and extrinsic incentives [44] can impact on new idea generation. While the role of intrinsic motivation (and incentives) appears to be predictable, the role of extrinsic motivation seems to be controversial regarding new idea generation and the creativity process over time.

Starting from the consideration that motivation is the initial force that reflects the direct activation of a goal, two forms of related incentives need to be recalled in order to study creativity processes. Thus, intrinsic motivation - linked with basic and advanced needs [45] - takes place when an individual feels pleasure in carrying out some activities without external rewards. It includes: 1) the need for achievement, and 2) the need for learning/knowing. In this sense, Herzberg [46] underlines that each appreciation and each award of merit from top management is a very strong motivation for every individual. More recent studies confirm that the best gratification for employees is to see their own ideas being implemented. Dworkin [47] referred to autonomous motivation: autonomy involves acting with a sense of volition and

having the experience of choice, it means endorsing one's actions at the highest level of reflection. Intrinsic motivation is an example of autonomous motivation [48, 49].

Proposition 4:
The actual implementation of his/her own ideas could help individuals develop higher motivation in their (creative) activities.

Extrinsic motivation, conversely, is linked to organizational consequences rather than to actions. "It requires an instrumentality between the activity and some separable consequences such as tangible or verbal rewards, so satisfaction might not come from the activity itself but rather from the extrinsic consequences to which the activity leads" [48, p. 331]. The analysis of the impact of extrinsic incentives have on creativity is quite controversial: Stenberg and Lubart [50, p.253] in an effectively metaphorical way, state that extrinsic motivation is to creativity "what strychnine is to orange juice" (see also [5O]). From a different perspective, Amabile [21] drew the same conclusion by stating that monetary incentives in exchange of new ideas induce individuals to be interested in money and not towards innovative ideas, so they will be looking for safe and rapid solutions to gain money.

The above mentioned elements lead to an apparent paradox, rooted in the idea that extrinsic incentives can constrain creativity. For instance, Amabile and her team [51] showed that students' creativity in exchange for a premium (or bonus) was lower and less effective (innovative) than their creativity without any reward. Furthermore, as noted by Rossman [59] through an experiment based on 700 inventors with the biggest motivating elements to create and study new ideas, extrinsic motivation could play a role in developing new ideas. By analyzing such evidence, we find that there is a "need to gain" and "need to get better" above "love to invention" and "desire for personal growth" which contradicts Stemberg and Lubart's model.

Deci [60,61] tests the additivity hypothesis that tangible extrinsic rewards undermine intrinsic motivation< whereas verbal rewards enhance it, thus implying that intrinsic and extrinsic motivation can be both positively and negatively interactive rather than additive.

Proposition 5:
The consistency of extrinsic positively impacts on individual motivation.

Cognitive factors and creativity
  Cognitive Evaluation Theory also suggests that external factors such as tangible rewards, deadlines [62], surveillance [63], and evaluations [19] tend to diminish feelings of autonomy, and undermine intrinsic motivation. In contrast, some external factors such as providing choice about aspects of task engagement tend to enhance feelings of autonomy, and increase intrinsic motivation [26]. In fact, feelings of competences as well as of autonomy are important to nurture intrinsic motivation.

 The adoption of the wider organizational perspectives does not help either: On the one hand, the process of ideation should be considered by organizations as part of their business and consequently should be given the usual rewards. On the other hand, when ideas are directly rewarded, the ideation process could be perceived as an extra-work activity.

The analysis of some recent contributions coming from economic and psychological fields justifies the existence of the "crowding out" effect of extrinsic incentives on intrinsic ones [49]. In actual fact, the possible detrimental effect of extrinsic motivation on performance can be found in the extension of the Self-Determination Theory (SDT) of Gagné and Deci [48], which starts from the assumption that human behavior is driven by three main innate psychological needs: Competence, Autonomy and Relatedness. The novelty of such an approach relies on the fact that psychological needs can be fostered or undermined by the external social context. To this extent, the process of internalization of extrinsic motivation leads to the equivalence between extrinsically motivated behavior and autonomy. According to SDT, there are three main ways of 'regulation'; defining different 'degrees' of extrinsic motivation [48]: a) Introjection: regulations are followed but not accepted by the agent (e.g. acting in order to feel valuable or to avoid penalties); b) Identification: individuals perceive greater freedom and volition when some overlapping between the expected behavior and the individual cultural and motivational basis occurs; c) Integration: when the identification involves other aspects of oneself (beliefs, interests, and values) the required activity itself become instrumental for the achievement of personal goals, while still being considered as extrinsic motivation. The usage of SDT for analyzing innovative behaviors results in two main managerial implications: a) intrinsic and extrinsic incentives can be considered as a continuum of possible states within the underlying needs driving human behavior; b) extrinsically motivated behavior can be efficient when an external regulation has been internalized. In

such cases, extrinsically motivated behavior will end up with a higher autonomy; c) As a consequence, control based on regulation rather than on the external influence exercised by a principal may be efficient because of the cognitive feedback gained by the agent (which nurtures the need for competence). Ultimately, different regulatory styles are in their turn consistent with a gradation of perceived loci of causality from impersonal and external to internal perceived locus of control. As for the managerial implications, we observe that in pure innovative contexts (e.g. creative activities) the internal locus of control and the self-determined behavior are compatible with relevant regulatory processes based on interest, enjoyment and inner satisfaction. When innovation takes instead place within codes of conducts and general guidelines (e.g. clinical innovation), extrinsic motivation should be compatible with the self-involvement of agents.

Proposition 6
The individual cognitive evaluation of the task and the perception of the locus of control influence the (motivational) impact of both intrinsic and extrinsic rewards. In this sense, the higher is the consistency between loci of control and regulatory styles, the more the individual can react to intrinsic and extrinsic stimuli with generation of new ideas.

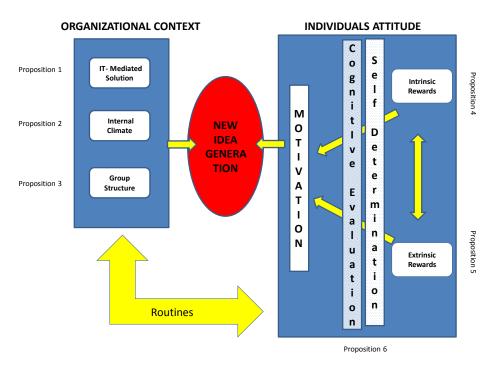**SECTION 2: Conceptual framework**

Figure 1. Conceptual framework

Section 1 described the several elements we have taken in consideration as organizational dimensions. The underlying rationale was to describe their impact on creativity without considering their mutual interdependence. The framework we propose tries to overtake such an assumption by distinguishing between organizational context and individuals' attitudes. Considering the set of propositions 1-3, we could state that IT-mediated solutions, internal climate and group structure could have a potential positive impact on creativity. Despite acknowledge their mutual interaction, we retain the assumption of their independence in order to simplify the framework itself, believing that the interlacing facets could only boost the existing positive impact on creativity (e.g. a positive internal climate in which a more diffused use of IT solutions could be enabled). So far it is quite clear that if organizations invest in such elements, or at least in the direction addressed by the propositions, that relative management programs should be more capable of fertilizing the generation of new ideas and/or reducing the leaks in the innovation processes.

While we kept the organizational dimensions separate, we believe that the loop (interaction) rewards-motivation can still explain individual behavior. On the one hand there is no doubt that creative performances are a sub set of the outcome of general organizational conduct. By recalling that we state that innovation comes out of motivated behavior rather than a pure creative pulse – we exclude the minor role allocated to pure improvisation. If so, the impact of intrinsic and extrinsic rewards cannot be ignored. Hence, in considering an individual-organization dyadic relationship, creativity could be nurtured by a proper system of rewards governance.

 What is new to the field is the recognition of the impact of the individual locus of control on creative performance. Following on from Gagné and Deci [48], we believe that self-determination and cognitive evaluation can both moderate the impact of motivation on creativity. In particular, we propose that a consideration of the self-determination of individual behavior could be addressed, although not predicted, by considering the impact of the diverse forms of incentive alongside with the level of autonomy. By having that in mind, it is possible to consider how various creative tasks (and their specific organizational settings) can be designed and managed consistently with the expected organizational outcome in terms of new ideas generation. Such an approach preserves the consideration that ideas are products of mental activities which take place before their actual representation.

The translation of such mental activities (generated with specific loci of control) could be further mediated by the cognitive evaluation of the author (employees/contributor). In such a way, the usefulness of the idea itself could be considered as a pure, and mere, individual activity subject to the pressures exerted by intrinsic and extrinsic rewards. Namely, the very same idea could generate different utilities over diverse individuals, or on the same individual over time. For example, the execution (implementation) of his/her own idea could be the main (and ultimate) source of motivation/satisfaction. In other cases, the fact that such an idea could be considered valuable by the external referent network (e.g. the relevant scientific or professional community) could be considered far more important that any extrinsic rewards. The fact that some companies are creating internal discussion groups and knowledge groupwares for idea sharing and filtering acknowledges the fact that cognitive evolution does matter for individual enactment.

Finally, organizational routines could represent a very powerful way by which managers could nurture creativity and link the organizational setting to (expected) individual behavior. The following paragraph will explore this idea.

Conclusion and discussion

To conclude, we acknowledge that the paper does not solve the paradoxes reported by the literature and we believe that, without systemic empirical research, few more speculations could be conducted on the subject. Notwithstanding its inner limits, we believe that the paper has shed some light on many grey areas and has made some propositions that could be helpful for both further research and managerial practice. In particular we submit that the cornerstones for future research could be synthesized in the individual perception of such incentives and the general organizational setting in which creativity takes place.

In actual terms, we believe that some routines could be designed with the aim of stimulating the effective (and efficient) deployment of creativity. In such a way, organizational routines could be intended as "regulatory processes" intended to complement intrinsic motivation with some monetary incentives. Such incentives are meant to be used in order to amplify the positive effects of feedback on the employees' morale. In short, creativity itself does not contradict the evidence by which extrinsic incentives could boost performance. It is, on the contrary, the organizational context in which creativity takes place that calls for proper mechanisms (incentive structures) (e.g. [62]). Such an approach relies on the synergic usage of extrinsic incentives, as described in Amabile's work "Creativity in Context" [5], which also tries to provide other elements for implementation. Furthermore, other unexplored areas rely on the links between intrinsic and extrinsic incentives in teamworking. On this point Ancona and Caldwell (1992) note that in organizational teams, subjective ratings sometimes determine promotions, future job assignments and performance evaluations. It may be debatable whether the social "mutual" control taking place in a creative context recalls somehow the idea of clan control introduced by Ouchi [64]. Further research in such a vein could be useful.

As many other practices related to human enactment, it is useful to recall the notion that the circular loop "(Expected Incentive)$_0$ $\rightarrow$ Motivation$_0$ $\rightarrow$ Performance (creativity)$_0$ $\rightarrow$ (Actual) Incentive$_0$ $\rightarrow$ Motivation$_{1 \ldots}$" is not affected only by the "psychological contract" that ties a single individual (A) to an organization, but that the subjectivity of evaluations calls for the concept of perceived equity. Thus, both for individual and collective forms of behavior, each individual does not consider only what he/she receives from the enterprise (Outcomes A) as a result of commitment (Input A) but tries instead to observe this relationship comparing it with other workers he considers equal/similar to him or herself (Outcomes B/Input B) [67]. n the case of a perceived inequity (2), whichever is the perceived incentive, the behavior of the individual (A) is not sure to reach to the expected level of performance (creativity).

Moreover, since the processes of goal reaching (e.g. [65]) generates a further procedural utility implies along with the organizational context (locus of causality, regulatory process, relationship with colleagues, available technologies, relationship with superiors), human resources management is a relevant part of the incentive. It is particularly interesting that when the corporate context is considered as positive by the workers, individual forms of behavior are not limited to what Katz and Kahn [66] have labeled as "productive" forms of behavior (result achievement) but on the contrary it is possible to start some "innovative" and "cooperative" forms of behavior that can be added to the previous forms. Such a consideration could solve the apparent dichotomy between individual creativity and organizational compliance (culture, structure, etc.). In this sense, the organizational context is potentially capable of generating internal relational economies based on shared procedures, knowledge, experiences and solutions. In order to generate an organizational context capable of stimulating these kinds of intrinsic incentives and spontaneous forms of behavior, a relational form of leadership that enhances such a cognitive capital becomes indispensable.

We conclude the paper by proposing the idea that, when considering the motivational and behavioral implications we have suggested, the creation of a whole and inner coherent system of routines that regulates the generation of new ideas could be more effective if rooted in the wider practice of human resources management and policy, since it could amplify the effect of both intrinsic and extrinsic incentives. The theoretical contributions we have explored in this paper seem to confirm the paradoxes related to the impact of rewards on new idea generation and cannot be solved straightforwardly but only by assuming a specific organizational and strategic direction: the alignment between the innovation practice and the human resources policy.

References

[67] Adams, J.S. & Freedman, S. 1976. "Equity theory revised: Comments and annotated bibliography" in Berkowitz L. & Walster E. (eds), *Advances in Experimental Social Psychology*, vol. 9, New York: Academy Press.

[28] Ajzen, I., Fishbein, M., 1980, *Understanding attitudes and predicting social behaviour*. Prentice Hall, Englewood Cliffs, NJ

[62] Alexy OT, Criscuolo P, Salter AJ, 2012. "No soliciting: Managing unsolicited ideas for R&D", *California Management Review*, Vol:54, Pages:116-139, ISSN:0008-1256

[7] Amabile, T.M., 1983, *The social psicology of creativity*. Spriger-Verlag, NY

Amabile, T. et al; 1996, "Assessing The Work Environment for Creativity." *Academy of Management Journal*. Vol. 39 No.5 pp1154-1184.

[62] Amabile, T. M., DeJong, W., & Lepper, M. R. 1976. "Effects of externally imposed deadlines on subsequent intrinsic motivation." *Journal of Personality and Social Psychology*, 34, 92–98.

[21] Amabile, T. M., Burnside, R. M., Gryskiewicz, S.S., 1988 "Assessing Organizational Climates for Creativity and Innovation: Methodological Review of Large Company Audits." *Foreword to New Directions in Creative and Innovative Management*, edited by Y. Ijiri and R. L. Kuhn. Cambridge, Mass.: Ballinger.

[51] Amabile, T. M., R. Conti, H. Coon, J. Lazenby, and M. Herron, 1996, "Assessing the Work Environment for Creativity." *Academy of Management Journal*, 39, 5, 1154-1184.

[5] Amabile, T. M., 1996, *Creativity in context, Boulder*, CO: Westview Press

[6] Amabile, T. M., 1988, "From Individual Creativity to Organizational Innovation." In: *Innovation: A Cross-disciplinary Perspective*, edited by K. Gronhaug and G. Kaufmann. Olso, Norway: Norwegian University Press.

[63] Ancona D.G., Caldwell, D.F., 1992, "Demography and design: Predictors of new product team performance", *Organization Science*, 3, pp. 321–341

[17] Andriopoulos, C., 2001, "Determinants of organisational creativity: A literature review,". *Management Decision*, Vol. 39, No. 10, pp. 834-840.

[1] Barsh, J., Capozzi, M., & Mendonca, L., 2007, "How companies approach innovation: The McKinsey survey." *The McKinsey Quarterly*.

[33] Björk and Magnusson, 2009, "Where Do Good Innovation Ideas Come From? Exploring the Influence of Network Connectivity on Innovation Idea Quality", *Journal of Product Innovation Management*, 26(6), pp. 662-670.

[18] Campbell, D., 1960, "Blind variation and selective retention in creative thought as in other knowledge processes." *Psychological Review*, 67, pp. 380-400.

[60] Deci, E. L., 1971. "Effects of externally mediated rewards on intrinsic motivation." *Journal of Personality and Social Psychology*, 18, 105–115.

[61] Deci, E. L., 1975, *Intrinsic motivation*. New York: Plenum.

[41] De Jong, J., den Hartog, D., 2010, "Measuring Innovative Work Behaviour", *Creativity and Innovation Management*, 19,1.

[9] DeSanctis, G. and Gallupe, R.B., 1987, "A foundation for the study of group decision support system", *Management Science*, Vol.5, pp. 589-609

[47] Dworkin, G., 1988, *The theory and practice of autonomy*. New York: Cambridge University Press.

[10] Ellis, C.A., Gibbs, S.J., Rein, G.L., 1991, "Groupware some issues and experiences", *Communication of the ACM*, Vol. 1 No 1, pp 39-58

[38] Ensely, M., Hmieleski, K., 2005, "A comparative study of new venture top management team composition, dynamics and performance between university-based and independent start-ups", *Research Policy*, 34, 1091-1105

[2] Fairbank, J. F. and Williams, S. D., 2001, "Motivating Creativity and Enhancing Innovation through Employee Suggestion System Technology." *Creativity and Innovation Management*, 10: 68–74. doi: 10.1111/1467-8691.00204

[42] Farr, J., Ford, C., 1990, "Individual Innovation." In: West, M., Farr, J. (eds), *Managing Innovation*. Sage, London

[49] Festré A., Giustiniano L. 2011, "Relational Capital and Appropriate Incentives: A recipe for human resources sustainability?", Proceedings of the 2011 International Conference on Human Resource Development, Taipei, Taiwan September 28-30. Forthcoming.

[28] Fishbein, M., Ajzen, I., 1974, "Attitudes towards objects as predictors of single and multiple behavioural criteria." *Psyc. Rev*. 81(1) 59-74

[37] Foo, Maw-Der Der, 2009, "Teams Developing Business Ideas: How Member Characteristics and Conflict Affect Member-Rated Team Effectiveness", *Small Business Economics*, 36:33-46

[22] Ford, C.M., 1996, "Theory of individual creative action in multiple social domains." *Acad. Management Rev*. 21 1112-1142

[65] Frey, B., Benz, M., Stutzer, A. 2004, "Introducing procedural utility: Not only what but also how matters." *Journal of Institutional and Theoretical Economics*, 160(3): 377-.

Frese, M., Teng, E. and Wijnen, C. J. D., 1999, "Helping to improve suggestion systems: predictors of making suggestions in companies." *Journal of Organizational Behavior,* 20: 1139–1155. doi: 10.1002/(SICI)1099-1379(199912)20:7<1139::AID-JOB946>3.0.CO;2-I

[48] Gagné M., & Deci, E.L., 2005, "Self-determination theory and work motivation." *Journal of Organizational Behavior*, 26: 331–362.

[29] Garfield, M.J., Taylor, N.J., Dennis, A.R., Satzinger, J.W., 2001, "Research Report: Modifyng paradigms-individual differences, creativity techniques and exposure to ideas in group idea generation." *Informations Systems Research*, Vol.12, No 3, Sept.

[30] Girotra, K., Terwiesch, C., & Ulrich, K. T., 2010, "Idea Generation and the Quality of the Best Idea," *Management Science*, 56(4), 591-605.

[40] Gore, C., Gore, E., 1999, "Knowledge Management: the way forward", *Journal of TQM*, 10(4/5), 554-560

[27] Guildford, J.P., 1950, "Creativity." *Amer. Psych*. 5 444-454

Herzberg, Frederick, 1959, *The Motivation to Work*, New York: John Wiley and Sons

[11] Jessup, L.M., Valacich, J., 1993, *Group Support System: New Perspectives*, Macmillan, NY

[4] Kanter, R.M., 1988, "When a Thousand Flowers Bloom: Structural, Collettive and Social Condition for Innovation in Organization", *Research in Organizational Behavior*, 10, 169-211

[31] Kavadias, S., Sommer, S.C., 2009, "The effect of problem structure and team diversity on brainstorming effectiveness", *Management Science*, 55(12), 1899-1913

[66] Katz D., & Kahn R.L., 1978, *The social psichology of organizations* (2 ed.), New York: Wiley.

[34] Lankau, M., Ward, A., Amason, A., Ng, T., Sonnenfeld, J., Agle, B., 2007, "Examining the impact of organizational value dissimilarity in top management teams", *Journal of Managerial Issues*, 19, 11-34

[63] Lepper, M. R., & Greene, D., 1975, "Turning play into work: effects of adult surveillance and extrinsic rewards on children's intrinsic motivation." *Journal of Personality and Social Psychology*, 31, 479–486.

[14] Lubart, T.I., Sternberg, R.J., 1995, "An investment approach to creativity: theory data", in: Smith S.M., Ward, T.B., Finke R.A., eds. *The creative cognition approach*, Cambridge, MA: MIT Press.

[25] Mainemelis, C., 2010, "Stealing fire: creative deviance in the evolution of new ideas", *Academy of Management Review*, 35, 4, 558-578.

[23] Mainemelis C., Ronson, S, 2006, "Ideas are born in fields of play: Towards a theory of play and creativity in organizational settings", *Research in Organizational Behavior*, 27, 81-131

[45] Maslow, A., 1954, *Motivation and Personality*. New York: Harper

[35] Milliken, F., Martins, L., 1996, "Searching for common threads: understanding the multiple effects of diversity in organisational groups", *Academy of Management Review*, 21, 402-433

[15] O'Donovan, G., 2006, *The Corporate Culture Handbook*, The Liffey Press.

[32] Osborne, A. F., 1953, *Applied Imagination: Principles and Procedures of Creative Thinking*. New York: Charles Scribner's Sons.

[64] Ouchi, W. G., 1979, "A conceptual framework for the design of organizational control mechanisms." *Management Science* (September): 833-848.

[36] Pelled, L., Eisenhardt, K., Xin, K., 1999, "Exploring the black box: an analysis of work group diversity, conflict, and performance." *Administrative Science Quarterly*, 44, 1-28

[43] Perry-Smith, J.E., Shalley, C.E., 2003, "The Social Side of Creativity: a Static and Dynamic Social Network Perspective", *Academy of Management Review*, 28, 89-106.

[20] Pissarra,J., Jesuino, J.C., 2005, "Idea generation through computer-mediated communication: The effects of anonymity", *Journal of Managerial Psychology*, Vol. 20 Iss: 3/4, pp.275 - 291

[44] Porter, M.W., Lawler, E.E.III, 1968, *Managerial Attitudes and Performance*, Homewood, IL:Irwin-Dorsey

[13] Prencipe, A., 2000, *Technological Competencies, Division of Labour, and the Boundaries of the Firm: The Case of the Aircraft Engine Industry*, Milano, FrancoAngeli.

[12] Reinig, B. and Shin, B., 2002, "The dynamic of group support system on group meetings", *Journal of Management Informations System*, Vol.2, pp 303-25.

[59] Rossman, J., 1931, *The Psychology of the Inventor.* Washington DC: Inventor's Publishing.

Rotter, J.B., 1966, "Generalized expectancies for internal versus external control of reinforcement", *Psychological Monographs*, 80 (1), whole n° 609.

[16] Schön, D., 1974, *Beyond the Stable State. Public and private learning in a changing society*, Penguin.

[8] Shalley, C.E., Zhou, J., Oldham G.R., 2004, "The Effects of Personal and Contextual Characteristics on Creativity: Where Should We Go from Here?" *Journal of Management* December 30: 933-958

[19] Smith, W. E., 1975, *The effect of anticipated vs. unanticipated social reward on subsequent intrinsic motivation*. Dissertation, Cornell University

[50] Sternberg, R.J., Lubart, T.I., 1995, *Defyng the crowd: cultivating creativity in a culture of conformity*, New York, NY: Free Press

[39] Thompson, J. D., 1967, *Organizations in Action*. New York: McGraw-Hill

[3] Van Dijk, C. and Van Den Ende, J., 2002, "Suggestion systems: transferring employee creativity into practicable ideas", *R&D Management*, 32: 387–395. doi: 10.1111/1467-9310.00270

[5] von Hippel, E., von Krogh, G., 2003, "Open Source Software and the 'Private-Collective' Innovation Model: Issues for Organization Science", *Organization Science*, 14(2), 209-223

[24] Woodman, R.W., Sawyer J.E., Griffin, R.W., 1993, "Toward a theory of organisational creativity", *Acad. Management Rev*. 18 293-321

[26] Zuckerman, M., Porac, J., Lathin, D., Smith, R., & Deci, E. L., 1978, "On the importance of self-determination for intrinsically motivated behavior", *Personality and Social Psychology Bulletin*, 4, 443–446.

[46] Herzberg, F. (1959), The Motivation to Work, New York: John Wiley and Sons.