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Creativity and Knowledge Sharing in Teams

ABSTRACT

Despite the wealth of studies related to team creativity, there is a general concern that the field still offers fuzzy indications about how team creativity (TC) can be supported within organizations. Creativity is enacted in the individual, within teams and within networks. Team creativity depends on creative individuals, processes, situations, the culture and the interaction of these factors. A growing number of organizations rely heavily on team creativity to enhance their capacity for generating new ideas. To enable knowledge sharing in teams in order to offer creativity within such a team, members must have access to an arena in which to engage in interpersonal dialogues to share their experiences, suggestions and knowledge with one another. Therefore, the objective of the study is firstly to find out what is understood by creativity of the team in terms of a process and outcome and secondly, to place the knowledge sharing process within the field of team creativity. A literature review was used to gather evidence about the key concepts in the fields of management, organization and creativity.

Key words: team creativity, knowledge sharing, creativity as a process and outcome
JEL Classification Codes: D83, M12

1. Introduction

Organizations around the world, large and small and across all types of industries are increasingly becoming team based [Mathiew, Gilson, 2008, p. 410]. It is generally believed that teams or groups of individuals working together will be better able to generate novel ideas quickly, appropriately adapt to changing customers' needs and generate multidisciplinary ideas or solutions to solve complex problems [Tagger, 2002, p. 317].

It has been established that some form of creativity is required in most jobs, what is considered creative can range from minor (incremental) adaptations or changes in how the work is performed to radical breakthroughs and the introduction of completely new processes or products [Gilson, Madjar, p. 2011]. A growing number of organizations rely heavily on team creativity (TC) to enhance their capacity for generating new ideas [Lorenzen, Frederiksen, 2005, p. 202].

Even if there are elements of creativity in most human endeavour, not all industries are organised principally to take advantage of and capture the market value of human creativity. Too many leaders try to demand creativity on the spot, they offer cash rewards for new ideas, sequester teams in endless brainstorming sessions, and encourage competitive hierarchies that reward some people for out-innovating others. While all of these strategies are intended to manifest organizational creativity, none do — and they often backfire.

Creativity is enacted in the individual, within teams and within networks [Kaufman, Sternberg, 2015, p. 32]. Such individuals, teams and networks as well as business firms that profit from them, are typically attracted to those geographic locations that offer the best milieus for them to coexist and interact, and as a result, particular places tend to be more characterised by human creativity than others. Creative teams are conceived as dynamic entities whose properties evolve due to complex interactions among their members and with their environment [Ilgen et al., 2005, p. 516].

It can be stated that the field of team creativity is characterized by a strong fragmentation to such an extent that Amabile and Pillemer [2012, p. 8] argued that "many new discoveries about creativity are being made each year within particular disciplines, but few of those discoveries exert influence over the wider community of creativity scholarship". Such fragmentation restricts scholars from having a clear picture of what is already known and how creativity is related to teams within the context of knowledge sharing.

Therefore, the objective of the study is as follows:
1. First, to find out what is understood by creativity of the team in terms of a process and an outcome;
2. Secondly, to place the knowledge sharing process within the field of team creativity.

To better understand the role and importance of creative teams, this paper is structured as follows: first, the team creativity is explained, followed by creativity as a process and an

outcome. Knowledge sharing process is explained in part 4. Concluding remarks are placed at the end of the paper.

1.1. Team creativity

Team creativity depends on creative individuals, processes, situations, the culture and the interaction of these factors [Amabile et al., 1996, p. 1159]. Creativity is a complex product of a person's behaviour in a given situation. The person brings to the situation cognitive abilities, knowledge, intrinsic motivation as well as personality traits and dispositions. The person is influenced by work-related group and organizational factors in the situation. These situational factors can facilitate or hinder creative behaviour. Creativity is best viewed in terms of outcomes [Amabile, 1988, p. 129]. Creativity can occur when performance is related to products, ideas, or procedures that are novel or original and are potentially relevant or useful to an organization [Oldham, Cummings, 1996, p. 630]. Group creativity is not the simple aggregate of individual team member creativity. Team creativity is more a function of an individual's creative performance, the individuals who interact, group characteristics, group processes, perceptions of the working environment, and organizational contextual factors [Woodman et al. 1993, p. 311]. A study focusing on projects with a high degree of creativity in a high-tech electronics international firm found that working environment scales that included challenging work, organizational encouragement, work group support, freedom, organizational impediments, supervisory encouragement, sufficient resources and workload pressure were distinguishing variables between the high-creativity and low-creativity projects. For research teams, Payne [1990, p. 109] identified resource availability, leadership, group size, cohesiveness, communication patterns, and group diversity as crucial to creative performance. Yetton and Bottger [1982, p. 315] found that increased achievement on creative tasks is sometimes due to groups' ability to rely on contributions of the most able persons. Docherty et al. [1996, p. 128] found that the way group interaction is structured is critical in determining the creativity level in a group.

Team creativity has been described as a collective phenomenon where its members behaviourally, cognitively and emotionally attempt new things, take novel approaches to their work, or generate products, processes or procedures that are both novel and useful [Gilson at al., 2004, p. 460]. It can be looked from two angles: where team creativity can emerge with the idea or suggestion of a single individual that is then developed, worked on, and elaborated upon the team or it can emerge from the collective when an idea emanates from the unit and then the team works to refine and develop this idea, which is presented in Figure 1.

Figure 1. Process of team creativity
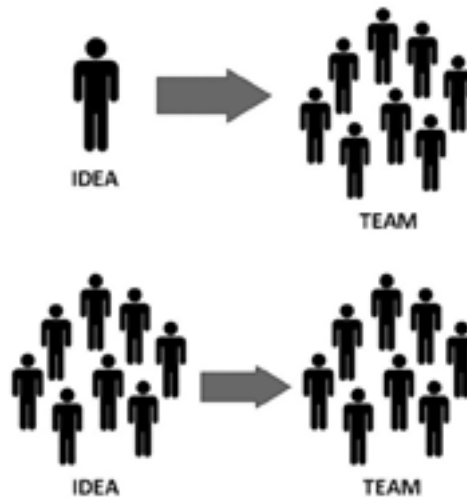
Source: the author's own material.

1.2. Team creativity as an outcome

Creativity can be conceptualized as both processes and an outcome. Regardless of whether creativity has been studied at the individual or group level, conceptualized as a process or an outcome, it has predominantly been considered as a dependent variable [Gilson, 2007, p. 320].

As an outcome, creativity is often considered to be the number of ideas generated [Goncalo, Staw, 2006, p. 106], the breadth of ideas generated or the creative rating of a single idea or a sample of ideas [Shallley et al., 2004, p. 951]. The majority of the creativity literature at the individual level has framed creativity as an outcome and something that is best rated by subject matter experts or through objective measures such as research reports [Amabile, 1996]. In a study designed to examine individualistic versus collective values and team creativity as an outcome, Goncalo and Staw [2006, p. 101] measured the number of ideas generated (fluency), whether the ideas were qualitatively different from one another, overall creativity of ideas generated, and creativity of the idea selected by the team as either the most creative or practical (depending on the manipulation). Their results consistently demonstrate that teams with individualistic rather than collectivist values, and who were instructed to be creative, generated more creative ideas, more unique ideas, a greater range of ideas (flexibility), and of the ideas they generated, they were better able to choose more creative ideas. At the individual level, it has long been found that individuals who are assigned a creativity goal are less constrained by other pressures and deadlines and are better able to focus their attention on a given task [Shalley, 1995, p. 492]. For teams it also appears that a goal to be creative is beneficial, however, an interesting question for team creativity researchers is who should set the team goal?

Setting aside social, political, and moral reasons for encouraging a more diverse workplace, there is arguably no better incentive for promoting diversity than the premise that diverse

teams and organizations are more creative. However, is there actually any evidence in support of this idea? And if there is, do the potential gains in creativity produced by diversity come at the expense of interpersonal harmony and team cohesion?

When considering creativity as an outcome, it is frequently argued that composition is an important antecedent [Egan, 2005, p. 215]. Team diversity reviews suggest, however, that it may be "a double-edged sword" – diversity is more likely to have a negative than a positive effect on group performance. Simply having more diversity in a group is no guarantee that the group will make better decisions or function effectively. Diversity is a mixed blessing and requires careful and sustained attention to be positive force [Williams, O'Reilley, 1998, p. 98]. When it comes to generating creative outcomes, diverse groups often do not perform as well as expected, in part because members tend to focus on their common knowledge and frequently encounter information and knowledge sharing problems [Ancona, Caldwell, 1992, p. 330].

There is a difference between generating ideas and implementing ideas. While diverse team composition does seem to confer an advantage when it comes to generating a wider range of original and useful ideas, experimental studies suggest that such benefits disappear once the team is tasked with deciding which ideas to select and implement, presumably because diversity hinders consensus. A meta-analysis of 108 studies and more than 10,000 teams indicated that the creativity gains produced by higher team diversity are disrupted by the inherent social conflict and decision-making deficits that less homogeneous teams create. It would, therefore, make sense for organizations to increase diversity in teams that are focused on exploration or idea generation, and use more-homogeneous teams to curate and implement those ideas. This distinction mirrors the psychological competencies associated with the creative process: divergent thinking, openness to experience, and mind wandering are needed to produce a large number of original ideas, but unless they are followed by convergent thinking, expertise, and effective project management, those ideas will never become actual innovations. Most organizations have a surplus of creative ideas that are never implemented, and more diversity is not going to solve this problem.

No matter how diverse the workforce is, and regardless of what type of diversity we examine, diversity will not enhance creativity unless there exists a culture of knowledge sharing (this will be discussed in part 4). Studies mapping the social networks of organizations have found higher levels of creativity in groups that are more interconnected, particularly when creative and intrapreneurial individuals are a central node in those networks.

1.3. Team creativity as a process

One of the early theories of the creative process was offered by Wallas who proposed a model of the cognitive creative process. According to his five-stage model, you first use *preparation* to begin work on a problem. Next comes *incubation*, in which you may work on other things while your mind thinks about the problem. In the *intimation* phase you are about

to realise that you are going to have a breakthrough. Then you actually have the insight in the *illumination* phase. Finally, with *verification*, you actually test, develop and use these ideas.

Basadur, Runco, and Vega have offered a simplified model centred on finding good problems, solving these problems, and then implementing solutions.

As a process, team creativity involves the sharing of ideas that stimulate associations and results in identifying problems, constructively dialoguing possible solutions to problems, and engaging in the act of trying novel approaches to a task. With regard to creative processes, it can be argued that based on information and decision-making theories, working in teams should be beneficial due to the diversity of perspectives and backgrounds. For instance, diversity should be beneficial because individuals are exposed to more approaches to problem solving along with a range of different ideas. Working in diverse teams should stimulate the consideration of non-obvious alternatives. The work by Jackson [1996, p. 70] suggests that for creative decision-making process, teams need to be diverse in both demographic and work-related characteristics. The argument here is that diversity will stimulate divergent thinking that is critical for creative processes in that it allows team members to approach idea generation and solution searches from multiple different perspectives [Mumford, Gustafson, 1998, p. 32].

All this being sad, diversity can also be detrimental to creative processes when team members are not willing to attend to the ideas, suggestions, and perspectives of those who are different from themselves and consequently consideration is only given to the views of similar others or those that might lead to consensus [Janis, 1982].

Too much diversity is problematic. Most studies assume that the relationship between diversity and creativity is linear, but recent evidence suggests that a moderate degree of diversity is more beneficial than a higher dose. This finding is consistent with the too-much-of-a-good-thing paradigm in management science, which provides compelling evidence for the idea that even the most desirable qualities have a dark side if taken to the extreme. In other words, all things are good in moderation (except moderation).

In a 2004 study Gilson and Shalley found that teams who were more engaged in creative processes also perceived their work as requiring higher levels of creativity, had members who were more likely to participate in decision making, shared common goals, had moderate levels of organizational tenure, worked independently, and socialized with one another both inside and outside of work. However, these teams were not operating in a creative industry.

In a study of service technician teams, Gilson et al., [2005, p. 523] found that while objective performance was positively related to team creativity, there was a significant interaction with standardized work processes, which, attenuated the influence of creative processes. Teams that were overly constrained by work standards were unable to reap the benefits of creativity. However, teams that operated in a less standardized manner and encouraged and supported creativity exhibited the highest levels of performance.

Finally, James et. al., [1999, p. 221] developed a theoretical model describing how creative processes can result in theft, sabotage and the undermining of the group and organizational goals. Here they argued that many of the group norms that should facilitate engagement

in creative processes (i.e., collective thinking and cooperation) can result in groups that become too cohesive and end up using creative processes to undermine the good of the organization and its customers.

1.4. Knowledge sharing within the context of creative teams

Teams are likely to become the primary vehicle through which internal and external knowledge is shared in a company. When teams become regular occurrence in the organization, knowledge sharing between and across teams and their various stakeholders becomes particularly important. Teams will need to:

- focus on their internal task;
- make sure they maintain relationships and interactions with their various stakeholders, whether company-internal or company-external; and
- become more outward-looking.

To enable knowledge sharing in teams, members must have access to an arena in which to engage in interpersonal dialogue to share their experiences and knowledge with one another. Work team interactions provide a context in which individuals can engage in such a dialogue [Engström, 2003, p. 39] as they involve a group of individuals embedded in a larger social system who work interdependently to perform tasks [Guzzo, Dickson, 1996, p. 325]. By highlighting the social interdependence of team members, this definition accounts for the social-constructivist nature of knowledge construction and individual members' contributions toward a shared understanding [Tillema, 2006, p. 182].

Figure 2. Process of knowledge sharing within a creative team
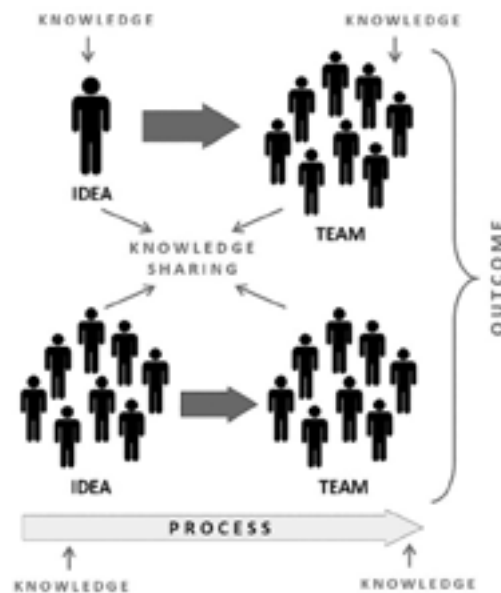
Source: the author's own elaboration.

Team creativity regarded as a process and an outcome is presented in Figure 2, which also places the role of knowledge sharing. Team creativity will not occur until the culture of knowledge sharing does not exist within the team, which we want to be called a *creative team*. A recent example referred as to the lack of knowledge culture sharing was a project once introduced by Nokia, where external IT specialists were invited to work on an open innovation. Diversity was not welcomed, the heterogeneity of Nokia employees made them impossible to work with external companies. "How much knowledge was I supposed to share?" (as a Nokia employee) proved to be problematic as well.

Although sharing of knowledge among organizational employees is encouraged [Zhang, Jasimuddin, 2012, p. 1115], knowledge sharing is not straightforward. For example, tacit knowledge is more difficult to share than explicit knowledge, which can be easily disseminated to a large number of people [Lin, 2008, p. 245].

Knowledge sharing (KS) is a critical behaviour in knowledge-based organizations and, therefore, a crucial element of knowledge management (KM). The organization is reliant on effective utilization of its collective knowledge pool, particularly its knowledgeable employees, which is why KS is a highly desirable behaviour from an organizational perspective [E.F. Cabrera, 2005, p. 728].

Knowledge sharing is the process by which individuals share explicit and tacit knowledge, work together to create new knowledge. This process is essential in transforming individual knowledge into organizational knowledge. This is obviously conditioned by effectiveness in different parts of the organization, which can be strengthened when people pass on information, good practices, tips, experience, lessons learnt. On the other hand, for individuals in a highly competitive environment, sharing knowledge means that individual knowledge is being disseminated to others, and those in turn can be competitors now or in the near future. This is the dilemma faced by an individual employee while analysing individual benefits and organizational benefits.

The literature reveals that the availability of several different knowledge sharing mechanisms and the richness of these mechanisms influence the effectiveness of knowledge sharing behaviour [Jones, Borgman, 2007, p. 16]. Some of the commonly used mechanisms for knowledge sharing are brainstorming and collaborative problem solving, team work, storytelling, training, informal chatting, meetings, project briefing and reviewing sessions, and information technology based mechanisms such as teleconferencing, newsgroups, e-mail, Wikis, web-based discussions, and knowledge sharing boards. Some scholars compared the effectiveness of knowledge sharing mechanisms and concluded that informal person-to-person knowledge sharing is more effective than technology based mechanisms in sharing knowledge in project teams [Newell et al., 2006, p. 171].

Teams have an important role in knowledge sharing [Becker, 2003, p. 57]. In the context of team work, previous studies provide evidence that knowledge sharing in teams leads to superior team performance in different work environments, such as research and development, new product development [Lee et al., 2010, p. 480], and software development. Knowledge sharing

among an organization's team members is critical for its competitive advantage [Halawi, 2006, p. 387]. The literature suggests that the sharing of knowledge in team work settings succeeds only if team members actively engage in knowledge sharing and by the efficient management of knowledge for the use by new teams with new projects.

Scholars view knowledge sharing as an organizational innovation, which leads to the dissemination of innovative ideas that has the potential to improve work processes and to develop new business opportunities [H.F. Lin, 2006, p. 31].

Knowledge sharing is argued to lead to better performance due to improved decision making and better coordination [Zarraga, Bonache, 2003, p. 1238]. In practice, however, knowledge sharing has proven challenging [Argote et al., 2003, p. 578]. And if knowledge is not shared, the cognitive resources available within a group remain underutilized [Argote, 1999, p. 68]. For the purpose of this paper, the author states that interpersonal trust, team leader support and rewards are valuable prerequisites for knowledge sharing that may bring creativity.

Interpersonal trust is identified as a necessary prerequisite for knowledge sharing [Al-Alawi et al., 2007, p. 30]. The willingness to share knowledge is higher when individuals trust and identify with one another. Nonaka [1990, p. 33] observed that interpersonal trust eliminates deception, cheating, and tendency among employees to blame others for organizational failures. Several past research studies were conducted on knowledge sharing in team work environment and empirically found that interpersonal trust positively associates with knowledge sharing. Whitener et al. argue that team members with stronger trust are more likely to work together collaboratively and conscientiously [Whitener et al., 1998, p. 521].

The literature reveals the importance of a variety of leader behaviours in knowledge sharing. Several previous research studies have empirically demonstrated a positive direct effect of team leadership on team knowledge sharing. Eppler and Sukowski [2000, p. 338] state that the team leader's function is to serve as a collaborator for openly sharing team information, put team members in others' shoes, provide feedback and create a climate of "high care".

Organizational rewards are identified as useful in motivating individuals to perform desired behaviours. Such rewards range from monetary incentives such as increased salary and bonuses to non-monetary rewards such as promotion and job security. Previous research provides evidence that real or perceived rewards encourage employees to share their knowledge. For instance, Choi et al. [2008, p. 748] provide evidence that a reward mechanism is more important than technical support in facilitating knowledge sharing. Bartol and Srivastava suggest that monetary rewards could encourage knowledge sharing through individual contribution to databases, formal interactions within and between teams, and knowledge sharing across work units. However, these authors state that knowledge sharing through informal interactions has to be rewarded by intangible incentives such as recognition.

2. Summary

Given the importance of innovation in today's knowledge based economy, sparking, nourishing and maintaining creativity is a critical condition for any organisation that seeks to achieve and sustain its competitive advantage. Considering the prevalence of teams in organizations, it can be noticed that a great deal of research attention has focused on team composition – the characteristics of individual members as well as their collective properties [Mathieu, 2008, p. 425]. At the same time, while theoretical work has routed the benefits of teams for creativity, limited empirical work with mixed and often inconclusive results has examined how team composition and processes influence team creativity.

Not enough attention was placed in the literature to knowledge sharing within the process of team creativity presented. Knowledge sharing is regarded as a craving outcome sought by employers in teams. Knowledge sharing will take place until the following conditions exists: interpersonal trust between team members, leader support and rewards, not only limited to financial ones. Therefore, this paper adds the dimension of knowledge sharing in the process of creative teams.

Creativity does not occur in vacuum, nor does it spring into the minds of individuals *ex nihilo*. Understanding creativity requires more than studying those individuals typically associated with a novel product, new movement or ground-breaking idea. While for instance, Picasso and Einstein stand out among their fellow peers, their unique contributions were made in concert with the intellectual and social networks or their work in groups that stimulated their thinking. There can be the other way around, a spark maybe developed by an individual and then worked within the team. As Csikszentmihalay [1998, p. 64] pointed out: "To say that theory of relativity was created by Einstein is like saying that it is the spark that is responsible for the fire".

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