HAL
open science

Network creativity: A conceptual lens for inter- and intra-organisational creative processes

Aurélie Hemonnet-Goujot, Björn Ivens, Catherine Pardo

To cite this version:

Aurélie Hemonnet-Goujot, Björn Ivens, Catherine Pardo. Network creativity: A conceptual lens for inter- and intra-organisational creative processes. Industrial Marketing Management, 2022, 102, 10.1016/j.indmarman.2022.02.002 . hal-03562190

HAL Id: hal-03562190

https://hal.science/hal-03562190v1

Submitted on 15 Mar 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Network creativity:
A conceptual lens for inter- and intra-organisational creative processes

Aurélie Hemonnet-Goujot
Aix Marseille Université, CERGAM,
IAE Aix,
13540, Puyricard, Aix-En-Provence
France.
Tel: +33 4 42 28 08 08
aurelie.hemonnet@iae-aix.com.

Björn Sven Ivens*
Chair professor of sales and marketing
Faculty of Social and Economic Sciences
Otto-Friedrich-University
Feldkirchenstrasse 21
96045 Bamberg
Germany
Tel: +49.172.169.1803
Bjoern.ivens@uni-bamberg.de

Catherine Pardo
Emlyon business school
23, avenue Guy de Collongue
69134 Ecully Cedex
France
Tel: +33.4 78 33 77 78
pardo@em-lyon.com

Keywords : Creativity, business networks, multi-actor creative processes

Article published in *Industrial Marketing Management*
HEMONNET-GOUJOT, Aurélie, IVENS, Björn Sven, et PARDO, Catherine. Network creativity: A conceptual lens for inter-and intra-organizational creative processes. *Industrial Marketing Management*, 2022, vol. 102, p. 503-513; https://doi.org/10.1016/j.indmarman.2022.02.002

1. Introduction

Business-to-business (B2B) markets are important arenas of innovation (Griffin et al., 2013). For example, among the list of top applicants for new patents at the European Patent Office (EPO) in 2020, one finds companies such as Siemens, General Electric, BASF, Intel, 3M, or Raytheon Technologies (EPO, 2021). The situation is similar at patent offices in other regions around the world. Empirical evidence suggests that, in addition, B2B innovation may have a greater effect on firm value than is the case for B2C innovation. For example, Dotzel and Shankar (2019) observe such an effect for B2B service innovation.

But innovation is not only an important activity for B2B companies, it also constitutes a complex task that involves several steps or elements. A fundamental element is creativity (Godin, 2015). Creativity, described as the capability of developing novel yet appropriate solutions (Amabile, 1988) and the generation of something new, yet useful (Stein, 1963; West, Kover, & Caruana, 2008), is required in the earliest stages of the innovation process (Polverini et al., 2011), or, as a World Bank report puts it: "It is the creative act which is the basis for an innovation" (Yusuf, 2007, p.2). Creativity has long been seen as distinct from the more general (Cannon, 1985; Heunks, 1998) process of innovation, but is typically interpreted as the starting point and a sub-process for the management of innovations on business markets.

Andersen and Kragh (2013) have encouraged research at the crossroads of the creativity concept and business markets: "Combining research on inter-organizational relationships with research on creativity seems to offer a potential for fruitful insights into how to tackle the paradoxical challenges involved in managing creativity across boundaries" (p. 82). For these authors, the context of business-to-business (B2B) markets instils an important and hitherto neglected dimension to the reflection about creativity, that is, the necessity on B2B markets to foster creativity "across boundaries" when two companies interact in a dyadic relationship

and work together in the creative phases of innovation processes. From this vantage point, creativity is not only a phenomenon that occurs inside one individual or inside one organisation, but it occurs also between individuals and between organisations. Against this background, the literature discusses creativity at five different levels: (1) individual, (2) group, (3) organisational, (4), dyadic inter-organizational, and (5) network inter-organizational creativity.

Much research has studied creativity at level (1) (e.g. Amabile, 1988; Amabile, 1997; Guilford, 1950; Shalley, Zhou, & Oldham, 2004). More recently, authors have directed their research interest at levels (2) and (3), for example in the form of team creativity within or across functional boundaries inside a company or in the form of firm-level creativity inside an entire company (Andersen, Kragh, & Lettl, 2013; Öberg, 2013; Woodman, Sawyer, and Griffin, 1993). Note that each level (1 , 2 and 3) typically affects the creativity observed on the other levels (Drazin, Glynn, & Kazanjian, 1999).

Acknowledging that creativity may also take place between companies, several authors suggest to study dyadic inter-organizational creativity (4) (Andersen & Kragh, 2013; Andersen, Kragh, & Lettl, 2013; Öberg, 2013) as a phenomenon that is inherent in many business relationships. For example, Andersen and Kragh (2013, p.82) stress the need for a deeper "understanding of the organization and management of creativity in business market relationships". They highlight the importance of the spanning of organizational boundaries for certain creative processes and suggest that such dyadic inter-organizational forms of creativity require specific skills and create idiosyncratic tensions that managers need to cope with. Within the B2B literature, some authors have studied the management of inter-organizational creativity challenges in a specific context, namely in creative industries such as advertising or design consulting (Beverland, 2005; Beverland, Farrelly, & Woodhatch, 2007; Hemonnet- Goujot, Manceau, & Abecassis- Moedas, 2019; LaBahn & Kohli, 1997). Others

focus their analysis on dyadic relationships in general (Noordhoff et al., 2011; Wang et al., 2008). Andersen and Kragh (2015) highlight the importance of boundary-spanning practices in such contexts and distinguish three meta-practices, that is, defining the creative space, making space for creativity, and acting in the creative space.

While level (4) creativity introduces inter-organisational creativity as an extension of the first three levels of creativity, many companies that are active on B2B markets do not only operate in dyadic relationships. Rather, they are part of network structures in which customer value is created through the interaction of several organisations. Consider, for example, the Covid-19 pandemic, pharmaceutical companies, private and public laboratories, universities, governments, and state administrations have been working together to jointly find potential remedies. Stimulating multi-organisational network creativity (5) in the development of new products provides a competitive advantage that is particularly useful in complex environments (Bissola, Imperatori, & Colonel, 2014). Creativity is the central challenge for these vast and competing networks. More generally, faced with rapidly changing, disintegrating, or merging markets, and hence the imperative to innovate more and ever faster, creativity is particularly crucial for the long-term competitive position of individual companies as well as the network in which they act and has become a priority research topic (Cankurtaran, Langerak, & Griffin, 2013; Hauser, Tellis, & Griffin, 2006; Markham, 2013). Yet, while joint innovation between multiple actors and involving creative activities are increasingly common strategies for B2B collaborations, a distinctive conceptual perspective has not been formulated (Noordhoff et al., 2011). Especially, the emergence of new networks[1] in B2B contexts raises the call for a better understanding of creativity in a complex inter-organizational setting. Network structure and collaboration intensity have been shown to be prone to affect creativity (Soda, Stea, &

[1] Different research streams in management discuss networks and related phenomena using different conceptual labels. While we acknowledge that, for example, the term business ecosystem is widely used by many authors, we use the word network throughout this manuscript. This choice serves the aim of clarity and does not involve any judgment regarding the relevance or appropriateness of other terms.

Pedersen, 2019). Moreover, a deeper understanding of the influence of the various modes of governance and the control strategies on the output of these inter-firm collaborations is still lacking (Carson, 2007; Noordhoff et al., 2011).

This paper aims to contribute to filling these gaps in the literature by addressing the following two research questions:

(1) How to characterize inter-organizational creativity from a multi-level perspective outside the boundaries of organizations, i.e. as level (5) creativity?

(2) What is the relationship between network creativity and other forms of creativity?

From a theoretical point of view, this conceptual paper contributes to theorize the notion of inter-organizational network creativity. Building on both the literature on creativity as well as on business markets, we first assess various perspectives of creativity when the concept is extended beyond the narrow meaning of ‘individual creativity’ to propose and define the term “network creativity” as a multilevel and boundary-spanning framing process. This multilevel approach offers a 'deeper, richer portrait' of creativity (Klein et al., 1999, p. 243) allowing for a 'holistic approach' of this phenomenon (Struyf et al., 2021).

Second, this paper assesses various governance types and discusses how they may apply in a network creativity context. From a managerial perspective, this paper offers a new theoretical tool to encapsulate and assess an emerging contemporaneous and complex B2B phenomenon.

The remainder of this paper is structured as follows. First, we review the notion of creativity in the literature with particular attention paid to creativity when it is described as a collective phenomenon. Then, we propose our conceptualization of network creativity by building on the notions of multilevel theorizing creativity (Drazin et al., 1999) and creativity qualities (Haviland, 2017). We then move on to the discussion of the different governance issues that level (5) ‘network creativity’ raises. We conclude by discussing the theoretical and managerial implications of our work as well as potential directions for future research.

2. Creativity

2.1. Theoretical perspectives on creativity

2.1.1 Creativity as a multi-faceted concept

The management literature takes a differentiated perspective on the concept of creativity. Authors from different sub-disciplines and schools of thought have studied the concept. They interpret creativity mainly in two complementary ways, that is, (a) creativity as a capability and (b) creativity as a process.

The first approach is concerned with the nature of creativity which consists of an actor's ability to create novel and appropriate, valuable ideas (Ford, 1996; Amabile et al., 1996). Here, creativity as a capability constitutes a potential for the process that leads to a novel outcome. Actors can be individuals or groups. Some authors have highlighted the role of contingency factors for creative capabilities. For example, studies rooted in psychological theory focus on how individuals generate ideas in specific social and contextual environments (Amabile, 1988; Van de Ven, 1986; Woodman, Sawyer, & Griffin, 1993). This research holds that creativity may exist as level (1) creativity within individuals, but also within groups of individuals or within organizations (levels (2) and (3)). For example, Ford (1996) developed a theory of individual creativity that integrates psychological and sociological perspectives of creativity within organizational settings composed of intertwined group, organizational, institutional, and market domains. Creativity in an organization is thus not only a function of individual creativity but also of the capability developed by individuals and a group (Taggar, 2002), and individuals and the organization (Woodman, Sawyer, & Griffin, 1993).

The second approach focuses on the process of creativity that is the result of thoughts, actions, and interactions leading an idea to its final form (Lubart, 2001). It is based on actors, activities, and exchange among them. From this perspective, creativity may be either improvisational or compositional (Woodman, 2008). Improvisational creativity is a mix of

intuition and spontaneity resulting in new knowledge (Vera et al., 2016), It can be seen as impulsive recombination of knowledge and processes that is conducive to creative problem solving. Compositional creativity occurs through more systematic variations and enhancements in ideas, processes, products, and services. Some authors argue that it is the extent of novelty that distinguishes both forms of creativity, where composition is seen as the lower level of creativity (Fisher & Amabile, 2008; Valaei, Rezaei, & Ismail, 2017).

In this 'practice' perspective, creativity is seen as a practiced social process in which structures play the important role of both enabling and constraining individual agents (level (1)) in pursuing creativity as a collective phenomenon (Fortwengel et al., 2017). The focus on structures has led authors to advance that research on creativity should not only analyze individuals and their interactions. Rather, it should extend its focus to the group (2), the organizational (3), and also the inter-organizational (4) levels. Several authors stress that there is still a strong need for empirical research that simultaneously analyses the individual and collective levels of creativity to better understand the emergence of collective creative ideas (Bissola, Imperatori, & Colonel, 2014; Hauser, Tellis, & Griffin, 2006). The literature also identifies several challenges. For example, while several scholars emphasize the role of interaction for creativity (Thompson, 2003; Weinzimmer, Michel, & Franczak, 2011; Woodman, Sawyer, & Griffin, 1993), interaction is mostly discussed as taking place between individuals or organizational units, and rarely between organizations (Öberg, 2013). Hence, certain authors point to the need for a controlled opening of organizational boundaries between functional groups through specific management methods as one of the conditions for organizational creativity to occur (Andersen, et al., 2013).

Summarizing, two major perspectives on creativity exist in the literature. They differ with respect to their main focus, that is creativity as a capability vs. creativity as a process. However, both streams of research converge in that they identify a need to study creativity not

only at the individual level, but also at levels such as groups, organizations, or inter-organizational relationships. Because our work intends to add to the understanding of creativity as a phenomenon that occurs between multiple organizational actors, that is, level (5) network creativity, in the next step we present theoretical perspectives through which organizational creativity has been discussed.

2.1.2 Theoretical perspectives on organizational creativity

Creativity as a unit of analysis at the organizational level was mainly studied through the theoretical lenses of the resource-based view (Im & Workman Jr, 2004), dynamic capabilities (Bucic & Gudergan, 2004) and knowledge management (Capaldo, 2007). In this perspective, organizational creativity is defined as "the creation of a valuable, useful new product, service, idea, procedure or process by individuals working together in a complex social system" (Woodman et al., 1993, p.293).

Seminal work by Amabile et al. (1996) is the starting point of this stream of research. This literature highlights that the organizational environment (Amabile et al., 1996) as well as an innovative organizational culture (Wang et al., 2008) are essential to favor creativity. Especially, the implementation of initiatives fostering team creativity is a major asset for companies seeking to benefit from innovation (Liu & Atuahene-Gima, 2018). It also reveals the importance of various organizational factors that affect creativity, such as encouragement of creativity, finding the right balance between autonomy and freedom, the influence of challenging work, workload pressure, or organizational impediment.

Within the organization, factors specific to the inter-functional setting have been identified, such as internal team dynamics (social cohesion, superordinate identity) and external team dynamics (reward system, planning formalization, encouragement to take risk) (Im, Montoya, & Workman Jr., 2013), even though the understanding of the influence of individual

creativity and contextual-level factors such as organizational support and control on team creative performance is still limited (Tu, 2009; Wang, Kim, & Lee, 2016).

The resource-based theory of the firm suggests that creativity is an intangible resource embedded within the firm that can provide a competitive advantage (Barney, 1991; Hunt & Morgan, 1995). Creativity is a strategic resource that is valuable, flexible, rare, and imperfectly imitable or substitutable that provides a sustainable competitive advantage to a company (Im & Workman Jr., 2004). Building on the resource-based view, recent research suggests favoring slack in resources (creative slack) and challenging routines to allow creativity to unfold (Cohendet & Simon, 2016).

This work has been further enriched by the theory of dynamic capabilities (Teece & Pisano, 2003) that allows identifying the organizational conditions that favor the development of creative capacities. The organization's dynamic capabilities reflect the ability to seek new resource combinations and relevant routines to facilitate and shape learning and creativity (Bucic & Gudergan, 2004). For example, in the alliance context, the roles, behaviors and interactions of the team members determine the creativity and learning in the cooperative arrangement and, thus, affect the dynamic capabilities (Bucic & Gudergan, 2004).

This process of creativity relies on the role of knowledge creation and knowledge transfer. Nonaka and Takeuchi (1995) point out that a company must understand how to create knowledge to develop innovative new products. Knowledge diversity refers to the scope and scale of knowledge, know-how, and expertise a firm can access (Rodan & Galunic, 2004). Knowledge transfer enables the emergence of new ideas through the combination of existing and newly acquired knowledge (Athaide & Klink, 2009; Katila & Ahuja, 2002). The process of knowledge transfer thus contributes to increased creativity through heightened exposure to knowledge flows (Capaldo, 2007).

In this stream of literature, creativity is not only related to organizational assets, but also to inter-organizational ones. The inter-organizational perspective on creativity focuses on the way how novel and useful ideas or approaches to business activities are generated in an inter-organizational (buyer–seller) context (Wang et al., 2008). More broadly, inter-organizational collaboration involves the complementarity of skills and promotes the transfer of tacit knowledge, the sharing of the knowledge, and the learning that is essential for innovation (Cohen & Levinthal, 1990). In an inter-organizational perspective, creative ideas sourced outside the organization may bring more value to innovation processes than internal ones, since they originate from a different knowledge perspective (Litchfield & Gilson, 2013). Furthermore, building on the theory of organizational creativity (Amabile et al. 1996; Andrews & Smith, 1996), the literature shows that factors such as power, trust, control structure and contracts are mechanisms that trigger the generation of creative approaches in inter-organizational settings (Andersen & Kragh, 2013; Carson, 2007; Wang et al., 2008).

In the innovation management literature, creativity is at the crossroads of organizational and inter-organizational units of analysis. Creativity, or idea generation, is the first stage of the NPD process ahead of the other stages (early design, late design and launch stages) (Cooper, 2014). Creativity is thus the first step of an innovation that is the implementation and the commercialization of appropriate ideas (Amabile, 1997). In this literature, creativity is mainly measured by the degree of novelty, the meaningfulness for customers, the fluidity (number of ideas), the flexibility (number of categories) and the feasibility (Guilford, 1967; Im & Workman Jr, 2004; Magnusson, 2009; Poetz & Schreier, 2012). Creativity is all the more important as it appears as an antecedent of new product success (Im & Workman Jr., 2004). Certain authors have, however, mitigated the idea that creativity is only required in the earliest stages of the innovation process. This is the case for Kumar, Yakhlef, and Nordin (2019) who show that the execution of the created ideas is also a creative process, in

particular because it requires a creative search for knowledge inside and outside the organization, a knowledge that will be used use to gain acceptance for the new generated ideas.

After presenting an overview of the various perspectives on creativity that the management literature provides, we now focus on the most important dimensions that allow distinguishing individual-level creativity from collective forms of creativity, that is, what we label 'joint creativity' or 'joint form creativity'.

2.2 Distinguishing 'individual-level creativity' from 'joint creativity'

Several authors have extended the focus of the creativity literature from the individual level to a more collective level: a 'joint form' of creativity. Whether they call it 'collective', 'social', 'open', 'distributive', 'group' or 'co'-creativity, these authors (e.g., Steiner, 2009; Parjanen, 2012; Harvey, 2014) conceptualize forms of creativity in which the activities of *several individuals* are involved and combined. This stream of research puts strong emphasis on three characteristics of joint forms of creativity: 1) the heterogeneity of actors and resources; 2) the central role of interaction processes, and 3) the importance common goals and interests. These characteristics are particularly helpful for our purpose of conceptualizing a network creativity. They focus attention on how individual and collective forms of creativity interact one with the other (Chaharbaghi & Cripps, 2007; Gu et al., 2018).

2.2.1. The heterogeneity of actors and resources in joint form creativity

The first dimension regards actors and resources. Most articles that discuss joint creativity highlight the heterogeneity of actors and resources involved in creative processes. Miettinen (2006), who uses the term 'distributed creativity', insists on the fact that resources involved are both dispersed across organizational boundaries and heterogeneous. Glaveanu (2014) uses the term distributed creativity (see also Pera, 2013) and refers to a creative action that is

“distributed between multiple actors, creations, places and times” (Glaveanu, 2014, p. 2). Most publications that discuss the concept of ‘group creativity’ (see Harvey, 2014; Paulus et al., 2019; Zhang, 2016) advance the idea that a higher level of heterogeneity between group members enhances group creativity. According to Hennessey (2017) the term ‘distributed creativity’ emphasizes that “creativity is plural rather than singular” (p. 343). Note that both improvisational and compositional creativity can be expected to occur in a joint form creativity context. While compositional creativity (see 2.1) is enabled by the diversity of heterogeneity of resources and capabilities that multiple actors from different organizations bring ‘to the table’ to see if combining them may produce creative outcomes, improvisational creativity may be enhanced because for each individual or group from one background (for example from a specific company with a specific corporate culture) the exchange of ideas with others offers new potential for spontaneous improvisation.

Note that the term group creativity is usually used “with a stronger inward-looking perspective, such as a group within a corporation” (Steiner, 2009, p. 17). Cirella (2016), defines collective creativity as relevant regarding ‘micro social systems that are nested within organizations’ (p. 332). A micro social system represents a limited amount of people (small groups or teams) that are part of a social network. Against this background and building on the innovation literature as well as the concept of ‘open innovation’, Steiner (2009) suggests using the notion of ‘open creativity’ to emphasize the multiplicity of parties involved in collective forms of creativity, that is, in joint form creativity. This author argues that creativity can be about a group of interacting individuals, but also about different groups which are interacting, or about a group interacting with a professional individual within or outside the own organization. Creativity can also be about a network of interacting organizations, or even an organization interacting with a heterogeneous external group of professionals and users/non-users (Steiner, 2009, p. 17).

2.2.2. Interaction as a central process for joint form creativity

Several authors particularly emphasize that joint forms of creativity result from the social *interaction* between actors. Building on Hardagon & Bechky (2006), Cirella (2016) insists on the idea that 'collective creativity is related to social interactions' (Cirella, 2016, p. 333). Hennessey (2017) in his discussion of the concept of 'distributed creativity' explains that it is "very much relational" (p. 343). Peronard & Brix (2017), who build on Parjanen (2012) and the pioneer works by Simmel (1950) use the term 'social creativity' which emphasizes "the connection between the individuals taking part in the creative process" (Peronard & Brix, 2017, p. 94). Very recently, DeClercq & Pereira (2021) have shown how "exchanges" have beneficial consequences on creativity.

For some authors, interaction in the creativity process can take place with 'things'. For instance, Miettinen (2006) describes creativity as a phenomenon that is "not within people or objects but in-between people and objects" (p. 9). Similarly, Glaveanu (2014) draws attention both to the role of social interaction but also to interaction with artefacts in the creativity process. For example, the concept of co-creativity – that appears in different fields such as education (Schmoelz, 2017; Stenning et al., 2016; Walsh et al., 2017), art and design (Haviland, 2017) – has been used to describe human-computers collaboration and digital creativity (Kantosalo & Jordanous, 2020; Liapis et al., 2016). However, Schmoelz (2017) emphasizes the 'wise and humanizing aspect' of co-creativity.

2.2.3. Shared goals and interests in joint form creativity

The literature also emphasizes how the sharing of common goals or common interests contributes to the effectiveness of collective forms of creativity (Cirella, 2016; Harvey, 2014; Quinn, 1992). In his definition of group creativity, Harvey (2014) describes how individuals

work “interdependently toward a shared goal” (p. 324). Cirella (2016) defines collective creativity as a process involving people who are motivated to cooperate to reach a “common final goal” (p. 332) or people who are ‘led by common interests’ (p. 333). Weijo et al. (2018) also explain how individual creative efforts are “geared towards advancing a shared collective project”. (p. 253). Chaharbaghi & Cripps (2007) posit that while creativity is first and foremost an individual’s capacity, it is “excited by the collective” (p. 635).

Against this background, we observe that both individual and join creativity exist. We furthermore observe that research interest for joint form creativity has increased in recent years, but that it has long been limited to creativity at the level of organizations. In the next sub-chapter we present the extension of the perspective on creativity from the organizational to the inter-organizational field.

2.3 From organizational to inter-organizational creativity

When the question of creativity is raised at an organizational level, one interesting issue that emerges is the paradoxical coexistence of managerial rules and the ‘freedom’ that seems to support creativity (see Andersen et al., 2013). Thus, an important issue identified with the concept of organizational creativity is the one of its management. As Litchfield and Gilson (2013) put it: “*innovation researchers sometimes appear perplexed about how to manage the outputs of a process that seems focused on somewhat random accumulations of ideas*” (p. 108).

The question of creativity at an organizational level has, most of the times been raised, through the perspective of how the organization can support individual creativity. As Öberg (2013, p.114) writes, “researchers often consider how an organization constitutes the environment surrounding and supporting the creativity of individuals”. However, the facts that interaction is a major element in the process view of creativity and that interaction in

creative processes takes place between individuals and between organizational units inside companies suggest that an inter-organizational perspective on creativity is the logical extension of the focus of analysis. On the one hand, literature on creativity largely describes the process of interaction between people as a source of creativity. On the other hand, interaction is at the core of inter-organizational exchanges. Moreover, heterogeneity of actors and resources (2.2.1) as well as shared goals (2.2.3) are also characteristic of inter-organizational relationships. Yet, as Öberg writes, while scholars "recognize the interaction in creative processes and point to shared output, the literature rarely considers inter-organizational interaction" (2013, p. 114). Building on the idea of inter-organizational creativity, Öberg (2013) discusses how close and loose interaction plays a role in the development of inter-organizational creativity and argues that both closeness and freedom are necessary for inter-organizational creativity to develop. More generally, the literature acknowledges that both from a capability perspective as well as from a process perspective creativity occurs in inter-organizational relationships.

Inter-organizational relationships are discussed in two forms in the literature. The first takes a dyadic perspective and analyses business relationships between two economic actors, for example between a buying company and a supplier company. The second extends the level of complexity and acknowledges that, oftentimes, one dyadic relationship between two companies is interdependent with one or several other relationships, that is, the activities that take place in one relationship cannot be analyzed without considering the activities occurring in one or several other relationship(s). The latter situation is referred to as business networks in the literature (Hakansson & Snehota, 1995). We suggest that, beyond the dyadic business relationship between two companies, creativity also plays an important role and exists in network relationships between groups of companies or other organizational actors (level (5)

creativity). Hence, in the next step we discuss multi-actor creativity as a concept of importance for network creativity.

3. Dimensions of multi-actor creativity

In this part we consider two concepts that we find helpful for conceptualizing network creativity. The first is the concept of 'multilevel creativity' as developed by Drazin, Glynn, and Kazanjian (1999) that allows to deal with different cross-level phenomena that network creativity displays. The second concept we will use is the one of 'qualities of creativity' as developed by Haviland (2017) which allows us to enrich our view of the interactive nature of network creativity. We review these two concepts below.

3.1 The concept of multilevel joint creativity

The different approaches of a 'joint creativity' (as we reviewed in the previous part) have also been accompanied by several attempts to propose multilevel models of creativity. Authors discussing multilevel creativity (Drazin et al., 1999; Ford, 1996; Woodman et al., 1993) put emphasis on how individuals' creativity relates to other forms of creativity whether they are 'group' (Woodman et al, 1993), 'community' (Oldham & Cummings, 1996) or 'organizational' creativity (Glynn, 1996). The concept of 'multilevel creativity' is important for our purpose in the sense it provides additional insights into how to deal with the creativity concept when several 'levels' (individual, group, organizational) are involved. Specifically, the ideas of *cross-level effects* and *shared meanings* are important.

In addition to be recognized as the first notable work dealing with a 'strong process view' of creativity, that is, is not considered as an outcome of independent variables, but rather as evolving "over time through a range of interdependent actions" (Fortwengel et al, 2017, p. 7) Drazin et al. (1999) notably conceptualizes creativity as a multilevel phenomenon. Indeed, in their work, Drazin et al. (1999) refer to the works by Woodman, Sawyer and Griffin (1993)

(relating creativity at the three levels of the individual, the group and the organization); Glynn (1996) (relating individual and organizational creativity); Ford (1996) and Oldham and Cummings (1996) (linking individual, job and organizational creativities). However, as Drazin et al. (1999) emphasize, those works have neglected the *cross-level* and systemic aspects of these multilevel conceptions of creativity.

Against this background, the authors, building on previous works by multilevel theorists (DiMaggio, 1991; Giddens, 1994; House, Rousseau, & Thomas-Hunt, 1995; Klein, Dansereau, & Hall, 1994; Rousseau, 1985) propose a new approach of creativity. Contrary to he functionalist perspective for which the 'creativities' of the individuals aggregate to form a 'group' or 'community creativity' (for instance the creativity of technicians), and on their turn, the creativities of groups aggregate to form an organizational creativity, Drazin et al. (1999)'s model of creativity points to cross-level, systemic, and embedded effects. Creativity at any level influences and is influenced by creativity at other levels, because as Ortmann and Sydow (2018) put it 'creativities of organizations and of their members exist simultaneously' (p. 83).

In addition, works dealing with multilevel creativity, bring a specific sensemaking (Weick, 1995; Woodside, 2001) perspective. In this conceptualization, each group will develop *shared meanings*. Meanings (here considered equivalent to *frames)* (Goffman, 1974) are about the "mental modes" of reality (Senge, 1990). Meanings are about the sense individuals develop about a situation (Drazin et al., 1999). They are mental models of "how things get done" (Woodside, 2001). Meanings are considered as a primary generator of individual action. *Shared* meanings are about meanings developed through interactions with others (Weick, 1995). Through interactions, meanings also are shared and - at least some of them – become common to a whole set of individuals.

Though Drazin et al. (1999) do not deal with a network level of creativity (they 'stop' at the level of organizational creativity), we nonetheless consider their approach useful for our purpose. The concept of shared meanings is important for our purpose. It allows understanding how individuals within a community may engage the same way in the creativity process, while individuals from two different groups may engage differently (given that meanings may be heterogeneous across different groups). Finally, at an organizational level, creativity becomes a *negotiated* process between the different groups. In addition, as emphasized by Drazin et al. (1999) this negotiation process between different meanings may be a conflictual one with 'periodic organizational crises' reframing 'the negotiated order of belief structures about creativity' (Drazin et al., 1999, p. 286).

Building on Drazin et al. (1999) we consider that a conceptualization of "network creativity" will have to take into account that: i) network creativity is influenced by and influences individual, group, and organizational creativities of all organizational actors involved in the network creativity; ii) network creativity is about different meanings of creativity that cohabitate or conflict one with the others; and iii) the issue of governance (to settle possible conflicts between organizational actors) is a central one.

3.2 The qualities of joint creativity

In her work on cultural organizations and institutions, Haviland (2017) justifies her use of the term co-creativity emphasizing that it refers to what she calls (along with Gershon, 2009 and Lassiter, 2005) the collaborative turn, that is, a new perspective "in which conventional hierarchies of knowledge creation have been challenged and the status of 'experts' have been questioned" (Haviland, 2017, p. 3). Building on this 'collaborative' dimension of co-creativity, Haviland identifies several 'qualities' of co-creativity. Co-creativity is considered to be: (i) *constellated*, which means that it is generated in the relationships between different actors; (ii) *positional*, which means that 'actors' in different positions perceive co-creation

differently; and these perceptions may change over time; (iii) *situated*, in the sense that the position (that influences the perception of co-creativity) is influenced by the socio-economic context, the culture and other structural frames and by "collective and individual histories" (Haviland, 2017, p. 14); (iv), in link with previous characteristics, co-creativity is also described as *mutable*, meaning that 'it will manifest differently with each iteration' (p. 14); (v), finally co-creativity is seen as *generative* in the sense that it will generate new processes, new values.

Together, multi-level creativity (3.1) and the qualities of joint creativity (3.2) as identified by Haviland (2017) provide us with a more complete picture of the forms of creativity that exist beyond individual creativity as it characterizes single human actors. On this basis, the next section provides a proposition for a conceptualization of the concept of network creativity such as it is pertinent on business markets.

4. A proposition for conceptualizing network creativity

Based on the preceding review of the creativity literature review, we propose to define the concept of network creativity for business markets as follows.

> Network creativity refers to the creation of novel and appropriate, valuable ideas in business networks that takes places through a specific process, that is, through interactions between actors, across multiple levels (individual, organizational and inter-organizational), involving heterogeneous contributions (diversity of actors and meanings), and following an open approach (cross-level effects).

In the three sections of this chapter, we present our conceptualization of network creativity in detail. We organize this conceptualization along three dimensions: i) the *nature* of network creativity; ii) the network creativity *process* and iii) network creativity *management*. Each of these dimensions encompasses several aspects that we discuss below. Finally, we integrate these dimensions and their aspects into a framework for studying network creativity.

4.1 The nature of network creativity

Network creativity refers to a situation where several organizations jointly develop novel useful ideas. The first dimension of our framework, the nature of network creativity, encompasses three aspects: its heterogeneity, its openness, and its multi-level structure.

(1) Heterogeneity. In network creativity, the organizations that develop novel useful ideas can be very different. We emphasise the 'diversity' of network creativity alluding to the fact that the different levels involved have their own frames of references. With every level, the potential heterogeneity of actors, resources, and knowledge increases. Different creative capabilities coexist at a network level (see Haviland, 2017) combining different perspectives that favour the proposal of new ideas; the variety of knowledge having a positive impact on creativity (Rodan & Galunic, 2004). This applies both to improvisational and compositional types of creativity.

We extend the model presented by Drazin et al. (1999). These authors consider that

- at level (1), that is, at the individual or intrasubjective level, single actors develop sensemaking frames.
- at level (2), that is at the group level or intersubjective level, individuals develop shared meaning within communities, such as departments or regional units.
- at level (3), that is, at the organizational level, diversity of level (2) shared meaning between groups often requires negotiation processes among diverse groups; this negotiation may follow different types of logics and should result eventually in a common negotiated order of understanding.

Extending the multi-level perspective beyond the limits of the individual organization, we suggest that the negotiation process continues

- at level (4), that is, the interorganizational level of creativity, in dyadic relationships between organizations, such as in buyer-seller relationships or dyadic strategic alliances on business markets; as well as
- at level (5), that is, the network level of creativity. In line with the multilevel approach to creativity, we suggest that - at the level of a network – different forms of creativity coexist. These encompass individual perceptions, group (community) frames, organizational frames, interorganizational frames (for instance built in creative dyadic relationship), and finally network frames.

The heterogeneous character of network creativity has consequences because it requires all actors to cope with high levels of complexity and to participate in coordinative efforts across levels (1) to (5).

(2) Openness. We consider that, at a network level, creativity is more likely to have an open character as compared to levels (1) to (4). Networks are typically characterized as open, fluid and evolving groups of companies (and possibly single actors) that participate in a joint value creation context (Chou & Zolkiewski, 2012); or as "an interdependent coalition of task- or skill-specialized economic entities (independent firms or autonomous organizational units) that operates without hierarchical control but is embedded, by dense lateral connections, mutuality, and reciprocity, in a shared value system" (Achrol & Kotler, 1999).

Contrary to a dyadic creativity, network creativity may take place in different configurations of the entities in the network. Not all of them need to be involved in every creative process, and new entities can join the network where appropriate. This echoes the principles of the open-innovation paradigm where companies chose to import knowledge and ideas from outside (inbound innovation) or to export their

knowledge and share their ideas (outbound innovation) (Chesbrough, 2003; Chesbrough & Appleyard, 2007).

(3) *Multi-level perspectives*. As described above, network creativity spans levels (1) to (5) in our classification. In addition to the heterogeneity of the five levels, we suggest that creativity perceptions of actors on all levels are potentially interdependent and that perceptions on one level may alter the perceptions at other levels. We consider that the creativity process at any level is influencing other levels and is influenced by other levels. For instance, a non-creative person in a group within an organization involved in network creativity process can acquire new competences and becomes creative. For instance, an idea considered less creative within one organization can be regarded as being quite creative for the network and even potentially, in return, be rediscovered as being creative within the person's own organization.

4.2 The process of network creativity.

A second dimension of our conceptualization of network creativity is related to its processual nature. In line with Drazin et al. (1999) we consider that network creativity is not a "discrete task" but rather a joint "engagement" of several organizations to produce creative outcomes (Drazin et al., 1999, p. 289) in chains of activities. Interaction is inherent in creative processes at levels (2) to (5) in our classification. However, its scope and complexity increase from level to level; for example, both improvisational and compositional types of creativity are easier to coordinate in a dyadic business relationship as compared to a network configuration. Beyond the inherent dynamic of network creativity based on interaction processes, we characterize the process of network creativity around three ideas:

(1) *Dynamics of network creativity (interaction process).* Regarding the choice of interaction partners in network creativity processes, there is a necessity to find a

balance regarding the similarity or dissimilarity of interaction partners. On the one hand, organizations in the network could choose other organizations that are similar so as to facilitate interaction. However, too much similarity inhibits creativity. They may also select dissimilar organizations, with which creativity could potentially be enhanced yet taking the risk of a difficult interaction and eventually hamper the creativity process. Because network creativity is heterogeneous in nature, a certain level of dissimilarity is inevitable. A possibility to balance level (5) similarity or dissimilarity may reside in leveraging the other levels to compensate for possible gaps and in order to compose the right mix of creative capabilities.

(2) Evolution. In the same way as creativity at a group or organizational levels, time will have an impact on the network creativity. Time will create variations in the different frames. Haviland (2017) talks about 'mutability'. This evolution (mutability) makes it impossible to 'stabilize' the phenomenon of network creativity. Therefore, certain of the management mechanisms that are created to manage the network creativity (see next point) will have to be regularly assessed and modified to capture the modification of reference frames and the entry of new actors. In particular when 'novel and useful ideas' are successfully created, the capacity of the network to 'reproduce' the success is not guaranteed.

(3) Emergence. In addition to its evolving nature, network creativity will be the place (as other types of collective creativity) of emergence (see Haviland, 2017 and her notion of generative creativity). This means that unanticipated effects of network creativity may occur. If the purpose of network creativity can be framed as 'various companies creating together new and useful ideas', additional phenomena may occur. For instance, the process may provoke changes in organizational structures of participants

in the network creativity process. For instance, more diffuse phenomena of social and cultural changes may occur as a consequence of network creativity.

4.3 The management of creativity.

Finally, we suggest that a third, management-focused dimension is required for network creativity. In line with Drazin et al. (1999) we consider that ‘’creativity as a process is a necessary, but not sufficient, condition for creative outcomes’’ (p. 290). We propose that several management practices are required to support the network creativity process.

(1) Meaning alignment practices. As the generation of novel and useful ideas occurs among different participants with different frames of meanings, some form of alignment is required. For instance, the very idea of what ‘novel’ and ‘useful’ actually means may necessitate that an agreement be reached throughout the various stages of the network creativity process. An idea might be considered novel by some actors of the network, but not by others. Therefore, important concepts – such as motivation to engage in network creativity, or satisfaction with the outcomes of the network creativity process – may not be shared by the actors, potentially leading to frictions or the abandon of the process. Hence, participants will need to agree upon meaning alignment mechanisms and moments before, during, and after the network creativity process takes place.

(2) Network arbitrage practices. Meaning alignment practices may not be sufficient. Organisations mays share the same central meanings about what is a ‘novel’ and what constitutes a useful ‘idea’. However, other aspects of network creativity may remain unaligned. For instance, the means and tools used to achieve creative outcomes, the temporality of creativity, the participants to the creativity process. All these aspects could necessitate additional arbitrage practices. ‘Rules’ are used to establish an arbitrage between different, conflicting creativities. If arbitrage practices may exist

within each organization involved in the network creativity process, they can be very different from one organization to another. Arbitrage practices must be found to support the network creativity process.

(3) Multilevel arbitrage practices. In addition, as every level of creativity is influenced by and influences other levels of creativity, each organization must envision possible modifications of its own creativity according to the 'network creativity' process. For instance, an organization may need to consider which type of creativity will be dealt with at a 'network level', and what type at the organizational (or group levels). Multilevel arbitrage refers to the decision which type of creativity to keep within the organization and which type to locate at the network level. It requires a managerial trade-off decision. On the one hand, keeping important creativity process steps or elements inside the organisation could be interpreted as a lack of collaboration by creativity partners in the network. On the other hand, declaring openly the level of network creativity as the company's main playing field for creativity could be interpreted as an open recognition or acknowledgement of a lack of potential for internal creativity. Thus, management needs to define multilevel arbitrage practices that maintain the credibility of the organisation as a network creativity partner.

(4) *Governance mechanisms.* Finally, companies need to find agreements with their external creativity partners to ensure that no actor profits unduly from the process and the outcomes of network creativity. Governance issues arise around creativity and creative processes because intellectual property rights are at stake (Andersen, 2006). According to the resource-based view (RBV), the ideas that constitute the outcomes of creative processes represent potentially valuable intangible resources for the actors involved (Grant, 1991, Im & Workman Jr., 2004). Note that the RBV often takes a single company perspective. Hence, this logic first applies to the strategic situation of

creativity inside a company, be it in the form of single actor creativity or joint creativity. However, in line with RBV literature on inter-organizational relations, we posit that network creativity in the form of inter-organizational, multi-level creative process may yield outcomes that represent valuable resources for all actors involved in network creativity (Eisenhardt & Schoonhoven, 1996; Van de Ven, 1976). Moreover, the outcomes of creative processes result from the combination of heterogeneous capabilities that are highly idiosyncratic and the specific combination of such capabilities by different actors may be the key to the development of new creative ideas (Verona, 1999). In this context, a firm's "ability to recognize the value of new, external information, assimilate it, and apply it to commercial ends is critical to its innovative capabilities" (Cohen & Levinthal, 1990, p.128) and is referred to as the firm's absorptive capacity. However, each actor involved in network creativity processes also needs to control the advantages that the other actors draw from the joint creative processes (Dechamp & Szostak, 2016) and, hence, limit the others' absorptive capabilities. In addition, Chen and Chen (2003, p.5) argue that "firms are interested not only in accessing or acquiring valuable resources that they do not own, but also in protecting their own valuable resources". Each actor is likely to expect a return from joint creative processes in networks that reflects the value of the idiosyncratic capability the actor provides in the process (Verona, 1999). All actors need governance mechanisms that allow regulating network creativity processes and outcomes. While creativity inside a firm is governed in a context of hierarchy, inter-organisational creativity (or creativity involving individuals across organizational boundaries) requires non-hierarchical governance instruments (Speklé, 2001), such as written formal contracts, informal relational contracts, or credible pledges. Eventually, companies that engage in network creativity processes need to negotiate the applicable

governance system with the other participants. This process likely leads to the emergence of plural form governance systems (Cannon, Achrol, & Gundlach, 2000; Heide, 2003).

Figure 1 summarizes the various dimensions of the network creativity. It represents the link with the result of network creativity processes, that is, the creativity of the output. The third dimension, network creativity management, is required to ensure that the challenges that are inherent in the network creativity process and in its nature are identified, understood, and that management takes decisions regarding the company's involvement in network creativity before and during the process.

***

Figure 1. Network creativity

***

5. Contributions

In this article, we have discussed the concept of network creativity. Against the background of current trends, such as platform business ecosystems or open innovation, but also in the light of major shifts within and in-between many formerly quite stable markets, we believe that the phenomenon of network creativity is of high empirical importance. Our conceptualization of network creativity integrates two evolutions compared to previous creativity models (Amabile et al., 1996; Drazin et al., 1999; Glaveanu et al., 2020; Hennessey & Amabile, 2010). Our network creativity model (compared to other models) displays both a change in degree and a change in nature. The change in degree relates to the increase in complexity in terms of the nature of the 'network creativity'. Heterogeneity rises because of more actors participating in the creativity process; an additional level (above the individual, group, organizational and

inter-organisational /dyadic, levels) is added; and openness accentuate because new actors, in turn represent, new ‘entry points’ for potential additional actors). The change in nature relates to a shift from an arbitrage management (that can for instance rely on contracts or relational norms between two organizations) to alignment management (for which the objective is to produce alignment between organizations). As far as the process part of our model is concerned, and because it relates to a time perspective, considering a network creativity (instead of a dyadic or an organizational creativities) does not represent neither a change in degree nor a change in nature.

5.1 Theoretical implications

With our paper, we contribute to a better understanding of network creativity through our comprehensive conceptualization of creativity as network phenomenon in several ways. While the idea of an inter-organizational form of creativity had already been introduced in prior research (Andersen & Kragh, 2013; Andersen, Kragh, & Lettl, 2013; Öberg, 2013), the concept of creativity in the context of different interacting organizations within a business network remained to be clarified.

First, this study enriches the creativity literature in several way. It proposes an integrative approach to “joint” creativity by summarizing the somewhat heterogeneous concepts that refer to forms of joint creativity in the extant literature. With our distinction between five levels of creativity, introduced at the beginning of this study, we suggest a distinction that may be helpful for locating different managerial decisions around creativity (e.g., managing the creative skills of individuals as compared to the creative capability of a department or a company) and for analysing interdependencies between levels of creativity (e.g., the impact of allocating a specific manager to a creative task at level (5) and its impact on creative processes at level (2) or (3), whether these are positive or negative).

Second, it brings out the concept of “multilevel” creativity enabling to refine the initial inter-organizational creativity construct. Inter-organizational creativity, that is, level (4) creativity, is not a distinct concept that should be discussed separately from levels (1), (2), or (3), for example under the assumption that the external relationship with a partner in a dyad transforms the creative task. Rather creativity should be thought of as a system that requires an integrative perspective.

Third, by adopting the network perspective, creativity can’t be analysed by relying on frameworks that allow discussing firm-internal creativity challenges. Rather, it requires a broader perspective, extending the extant creativity literature by an extended perspective: the “network creativity” that integrates the complexity of creativity in a business network setting. It especially precise the three dimensions of network creativity that are its nature, its process, and its management.

Second, this study contributes to the B2B literature by linking the network concept to the creativity processes that take place so often in industrial contexts. It consolidates the network concept as a central concept for the exploration of various B2B phenomena. The network creativity concept provides the B2B literature with a more complete view of the phenomenon of business exchanges. By focusing on early exchanges in commercial relationships that - ideally - give birth to ideas that can then be exploited by several actors, it highlights a specific ‘moment’ of business relationships that is not often discussed in the relationship or network literatures. It thus contributes to complete our view of how and why organizations interact.

Third, our work also proposes the notion of creativity governance. While governance mechanisms have received much attention in the literature on business relationships, it has often been studied regarding ongoing commercial exchanges. The focus of extant studies often is on relationships in which more or less customized offerings are exchanged on a quite regular basis against a monetary or equivalent counterpart, for example in just-in-time buyer

supplier relationships or in manufacturer-retailer relationships. While this literature shows that it is not a simple task to design effective governance structures for such ongoing transactions around quite precisely defined objects of exchange, designing governance mechanisms for largely unpredictable objects of collaborative interactions must be far more complex. Whether, for example, the important role that relational norms play in classical business relationships is similar, lower, or higher, cannot be said with certitude. Should they be a mechanism of governance for which actors in network creativity processes often opt, the emergence of shared expectations regarding appropriate behaviours (i.e., norms) must surely be a much more complex process in itself as compared to dyadic relationships, and one would expect that it relies strongly on effective alignment as part of network creativity processes.

Our comprehensive conceptualization of network creativity integrates two evolutions compared to previous creativity models (Amabile, 1996; Drazin et al., 1999; Glaveanu, 2010; Hennessey & Amabile, 2010). Our network creativity model (compared to other models) displays both a change in degree and a change in nature. The change in degree relates to the increase in complexity in terms of the nature of the 'network creativity'. Heterogeneity rises because of more actors participating in the creativity process; an additional level (above the individual, group, organizational and inter-organisational / dyadic, levels) is added; and openness accentuated because new actors represent new 'entry points' for potential additional actors. The change in nature relates to a shift from an arbitrage management (that can for instance rely on contracts or relational norms between two organizations) to alignment management (for which the objective is to produce alignment between organizations). As far as the process part of our model is concerned, and because it relates to a time perspective, network creativity (instead of a dyadic or an organizational form of creativity) represents neither a change in degree nor a change in nature.

5.2 Practical implications

From a practical perspective, this research provides managers with several thoughts. First, while the open perspective on innovation management has been practiced and discussed for quite some time now, there is a specific focus to bear in mind when considering “open” approaches to creativity in business networks. Network creativity supposes a specific attention brought to the different ‘levels’ at which creativity may be managed. Contrary to the classical firm-internal creative processes or to the inter-organizational dyadic processes, network creativity increases complexity and, hence, the need for coordination. Managers who have been involved in the management of individual, group, organizational and inter-organizational creativities will experience a more novel context when entering situations of network creativity.

Second, the challenges of network creativity require in particular a company’s top-management to measure carefully how closely they should be involved or at least informed about ongoing network creativity processes projects. These projects typically have a strategic dimension and in order to manage them in accordance with a company’s general business strategy, top-management must either provide clear guidelines how company representatives should engage in such creative processes or they need to be present themselves, at least in the decisive moments. The more they delegate, and the more they will need to define criteria for selecting the ‘right’ representatives for their company in the network’s creativity projects. And they must allow their representatives short communication channels to continuously ensure the alignment of the creative developments in network creativity projects with the company strategy.

Against this background, network creativity processes represent a true opportunity for companies as well as for the entire networks in which companies engage in creative processes. However, they also represent a considerable amount of risk which should lead

managers to reflect in much detail on the appropriate governance for the projects they consider participating in.

5.3 Future research directions

Regarding future research, we see numerous promising opportunities for scholars to investigate the complex phenomenon of network creativity. In fact, every one of the three dimensions of network creativity that our conceptualization of the phenomenon encompasses offers several possible avenues for future research. Without being exhaustive, we provide two examples:

First, in terms of processes of network creativity, future research may start by collecting real-world cases and study whether there are typical patterns of activities, actors, and also resources involved in these projects. It may well be, that depending on the type of network in which creative processes take place (for example, within strategic alliances, or inside platform business ecosystems) different processes in terms of interactions, evolution, and emergence can be observed. In this case, it would be of interest to understand the driving forces behind these different process patterns as well as the results they lead to. For example, research might conclude that the reasons that lead to situations of network creativity and the outcomes of network creativity differ between types of networks, maybe including different levels of opportunistic behaviours shown by the actors involved. This would point to different needs or conditions for governance mechanisms and structures between the different network types.

Second, and building on our previous first research direction, the complex nature of networks and the inherent risk of opportunistic behaviour in network creativity situations raise numerous questions regarding intellectual property and governance mechanisms. We suggest that scholars start with exploratory research that documents what plural form governance structures can be observed regarding network creativity, how they differ between each other,

and how satisfied actors are with them. Such work could also include identifying typical forms of opportunistic behaviours that occur in contexts of network creativity, or additional governance mechanisms that are not commonly used in dyadic business relationships but that may prove to be valuable in network creativity. Finally, a topic that has hardly received attention, not even in research on dyadic relational governance, concerns possible equifinality among combinations of governance mechanisms, that is, the fact that there may not be one combination of formal and informal governance mechanisms that always yields the best possible outcomes for network creativity situations, but rather several combinations that lead to similar results.

Summarizing, we see vast potential for future studies on network creativity, using quantitative research designs, but – importantly – also building on the strengths of qualitative studies for this complex managerial phenomenon about which little is known to the best of our knowledge today.

References

Achrol, R. S., & Kotler, P. (1999). Marketing in the network economy. *Journal of Marketing*, 63(4_suppl1), 146-163.

Amabile, T. M. (1988). A model of creativity and innovation in organizations. In B. M. Staw, & L. L. Cumming (Eds.), Research in Organizational Behavior, 10, 123–167, Greenwich, CT: JAI Press.

Amabile, T. M. (1997). Motivating creativity in organizations: On doing what you love and loving what you do. *California Management Review*, 40(1), 39–58.

Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, *39*(5), 1154-1184.

Andersen, B. (2006). *Intellectual property rights: Innovation, governance and the institutional environment*. Cheltenham : Edward Elgar Publishing.

Andersen, P. H., & Kragh, H. (2013). Managing creativity in business market relationships. *Industrial Marketing Management*, *42*(1), 82-85.

Andersen, P. H., & Kragh, H. (2015). Exploring boundary-spanning practices among creativity managers. *Management Decision*, 53(4), 786-808.

Andersen, P. H., Kragh, H., & Lettl, C. (2013). Spanning organizational boundaries to manage creative processes: The case of the LEGO group. *Industrial Marketing Management*, *42*(1), 125-134.

Andrews, J., & Smith, D. C. (1996). In search of the marketing imagination: Factors affecting the creativity of marketing programs for mature products. *Journal of Marketing Research*, *33*(2), 174-187.

Athaide, G. A., & Klink, R. R. (2009). Managing seller–buyer relationships during new product development. *Journal of Product Innovation Management*, *26*(5), 566-577.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99-120.

Beverland, M. (2005). Managing the Design Innovation–Brand Marketing Interface: Resolving the Tension between Artistic Creation and Commercial Imperatives. *Journal of Product Innovation Management*, *22*(2), 193-207.

Beverland, M., Farrelly, F., & Woodhatch, Z. (2007). Exploring the dimensions of proactivity within advertising agency—client relationships. *Journal of Advertising*, *36*(4), 49-60.

Bissola, R., Imperatori, B., & Colonel, R. T. (2014). Enhancing the creative performance of new product teams: An organizational configurational approach. *Journal of Product Innovation Management*, *31*(2), 375-391.

Bucic, T., & Gudergan, S. P. (2004). The impact of organizational settings on creativity and learning in alliances. *M@n@gement*, *7*(3), 257-273.

Cankurtaran, P., Langerak, F., & Griffin, A. (2013). Consequences of new product development speed: A meta- analysis. *Journal of Product Innovation Management*, *30*(3), 465-486.

Cannon, J. P., Achrol, R. S., & Gundlach, G. T. (2000). Contracts, norms, and plural form governance. *Journal of the Academy of Marketing Science*, 28(2), 180-194.

Cannon, T. (1985). Innovation, creativity and small firm organisation. *International Small Business Journal*, *4*(1), 34-41.

Capaldo, A. (2007). Network structure and innovation: The leveraging of a dual network as a distinctive relational capability. *Strategic Management Journal*, *28*(6), 585-608.

Carson, S. J. (2007). When to give up control of outsourced new product development. *Journal of Marketing*, *71*(1), 49-66.

Chaharbaghi, K., & Cripps, S. (2007). Collective creativity: Wisdom or oxymoron? *Journal of European Industrial Training*, *31*, 626–638.

Chen, H., & Chen, T. J. (2003). Governance structures in strategic alliances: transaction cost versus resource-based perspective. *Journal of World Business*, *38*(1), 1-14.

Chesbrough, H. W. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business Press.

Chesbrough, H. W., & Appleyard, M. M. (2007). Open innovation and strategy. *California Management Review*, *50*(1), 57-76.

Chou, H. H., & Zolkiewski, J. (2012). Decoding network dynamics. *Industrial Marketing Management*, *41*(2), 247-258

Cirella, S. (2016). Organizational variables for developing collective creativity in business: A case from an Italian fashion design company. *Creativity and Innovation Management*, 25, 331-343.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *35*(1), 128-52.

Cohendet, P. S., & Simon, L. O. (2016). Always playable: Recombining routines for creative efficiency at Ubisoft Montreal's video game studio. *Organization Science*, *27*(3), 614-632.

Cooper, R. G. (2014). What's next?: After stage-gate. *Research-Technology Management*, *57*(1), 20-31.

De Clercq, D., & Pereira, R. (2021). Taking the Pandemic by Its Horns: Using Work-Related Task Conflict to Transform Perceived Pandemic Threats Into Creativity. *The Journal of Applied Behavioral Science*, 57(1), 104–124.

Dechamp, G., & Szostak, B. (2016). Organisational creativity and the creative territory: The nature of influence and strategic challenges for organisations. *M@n@gement*, 19(2), 61-88.

DiMaggio, P. 1991. The micro-macro dilemma in organizational research: Implications of role-system theory. In I. Huber (Ed.), *Macro-micro linkages in sociology:* 76-98. Newbury Park, CA: Sage

Dotzel, T., & Shankar, V. (2019). The relative effects of business-to-business (vs. business-to-consumer) service innovations on firm value and firm risk: An empirical analysis. *Journal of Marketing*, *83*(5), 133-152.

Drazin, R., Glynn, M. A., & Kazanjian, R. K. (1999). Multilevel theorizing about creativity in organizations: A sensemaking perspective. *Academy of Management Review*, *24*(2), 286-307.

Eisenhardt, K. M., & Schoonhoven, C. B. (1996). Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms. *Organization Science*, *7*(2), 136-150.

EPO (2021). Annual report 2020 of the European Patent Office, https://www.epo.org/about-us/annual-reports-statistics/statistics.html

Fisher, C. M., & Amabile, T. (2008). Creativity, improvisation and organizations. In *The Routledge companion to creativity*, 27-38, Routledge.

Ford, C. M. (1996). A theory of individual creative action in multiple social domains. *Academy of Management Review*, *21*(4), 1112-1142.

Fortwengel, J., Schüßler, E., & Sydow, J. (2017). Studying organizational creativity as process: Fluidity or duality?. *Creativity and Innovation Management*, 26(1), 5-16.

Gershon, W. S. (2009). *The Collaborative Turn Working Together in Qualitative Research*: Sense Publishers.

Giddens, A. (1994). *Central problems in social theory: Action, structure and contradiction in social analysis.* Berkeley, CA: University of California Press.

Glaveanu, V. P., Hanchett Hanson, M., Baer, J., Barbot, B., Clapp, E. P., Corazza, G. E., ... & Sternberg, R. J. (2020). Advancing Creativity Theory and Research: A Socio-Cultural Manifesto. *Journal of Creative Behavior, 54*(3), 741-745.

Glaveanu, V.P. (2014). Distributed creativity: Thinking outside the box of the creative individual. New York: Springer.

Glynn, M. A. (1996). Innovative genius: A framework for relating individual and organizational intelligences to innovation. *Academy of Management Review, 21*, 1081-1111.

Godin, B. (2015). Innovation and creativity. In Antonelli, C., Link, A.N. (Eds.). *Routledge Handbook of the Economics of Knowledge*, Abingdon : Routledge, 7-18

Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Harvard University Press.

Grant, R. M. (1991). The resource-based theory of competitive advantage: implications for strategy formulation. *California Management Review*, 33(3), 114-135.

Griffin, A., Josephson, B. W., Lilien, G., Wiersema, F., Bayus, B., Chandy, R., ... & Spanjol, J. (2013). Marketing's roles in innovation in business-to-business firms: Status, issues, and research agenda. *Marketing Letters, 24*(4), 323-337.

Gu, J., Chen, Z., Huang, Q., Liu, H., & Huang, S. (2018). A multilevel analysis of the relationship between shared leadership and creativity in inter- organizational teams. *The Journal of Creative Behavior, 52*(2), 109-126.

Guilford, J. P. (1950). Fundamental statistics in psychology and education. 2nd ed.). McGraw-Hill.

Guilford, J. P. (1967). Creativity: Yesterday, today and tomorrow. *The Journal of Creative Behavior, 1*(1), 3-14.

Harvey, S. (2014). Creative synthesis: Exploring the process of extraordinary group creativity. *Academy of management review, 39*(3), 324-343.

Håkansson, H., & Snehota, I. (1995). *Developing relationships in business networks*. London: routledge.

Hardagon, A., & Bechky, B. (2006). When collections of creatives become creative collectives: A field study of problem solving at work. *Organization Science, 17*(4), 484-500.

Harvey, S. (2014). Creative synthesis: Exploring the process of extraordinary group creativity. *Academy of Management Review, 39*(3), 324-343.

Hauser, J., Tellis, G. J., & Griffin, A. (2006). Research on innovation: A review and agenda for marketing science. *Marketing Science, 25*(6), 687-717.

Haviland, M. (2017). Mapping qualities of cultural co-creativity. *Medienimpulse, 55*(4), 1-26.

Heide, J. B. (2003). Plural governance in industrial purchasing. *Journal of Marketing*, 67(4), 18-29.

Hemonnet-Goujot A., Manceau D., & Abecassis-Moedas C. (2019). Drivers and pathways of NPD success in the marketing-external design relationship. *Journal of Product Innovation Management, 36*(2), 196-223.

Hennessey, B. A. (2017). Taking a systems view of creativity: On the right path toward understanding. *The Journal of Creative Behavior, 51*(4), 341-344.

Hennessey, B.A., & Amabile, T.M. (2010). Creativity. *Annual Review of Psychology, 61*, 569– 598.

Heunks, F. J. (1998). Innovation, creativity and success. *Small Business Economics, 10*(3), 263-272.

House, R., Rousseau, D. M., & Thomas-Hunt, M. (1995). The meso paradigm - A framework for the integration of micro and macro organizational-behavior. *Research in*

Organizational Behavior: An Annual Series of Analytical Essays and Critical Reviews, 17 (17) 71-114.

Hunt, S. D., & Morgan, R. M. (1995). The comparative advantage theory of competition. *Journal of Marketing*, *59*(2), 1-15.

Im, S., & Workman Jr, J. P. (2004). Market orientation, creativity, and new product performance in high-technology firms. *Journal of marketing*, *68*(2), 114-132.

Im, S., Montoya, M. M. and Workman, J. P. (2013). Antecedents and consequences of creativity in product innovation teams. *Journal of Product Innovation Management*, *30*(1), pp. 170–185

Kantosalo, A., & Jordanous, A. (2020, February). Role-Based Perceptions of Computer Participants in Human-Computer Co-Creativity. AISB.

Katila, R., & Ahuja, G. (2002). Something old, something new: A longitudinal study of search behavior and new product introduction. *Academy of Management Journal*, *45*(6), 1183-1194.

Klein, K. J., Dansereau, F., & Hall, R. J. (1994). Levels issues in theory development, data collection, and analysis. *Academy of Management review*, *19*(2), 195-229.

Klein, K. J., Tosi, H., & Cannella Jr, A. A. (1999). Multilevel theory building: Benefits, barriers, and new developments. *Academy of Management review*, *24*(2), 243-248.

Kumar, N., Yakhlef, A., & Nordin, F. (2019). Validation of organizational innovation as a creative learning process. *Journal of Business & Industrial Marketing*, *34*(3) 643–650

LaBahn, D. W., & Kohli, C. (1997). Maintaining client commitment in advertising agency–client relationships. *Industrial Marketing Management*, *26*(6), 497-508.

Lassiter, L. E. (2005). *The Chicago Guide to Collaborative Ethnography*. Chicago: University of Chicago Press.

Liapis, A., Yannakakis, G. N., Alexopoulos, C., & Lopes, P. (2016). Can computers foster human users' creativity? Theory and praxis of mixed-initiative co-creativity. *Digital Culture & Education*, 8(2).

Litchfield, R. C., & Gilson, L. L. (2013). Curating collections of ideas: Museum as metaphor in the management of creativity. *Industrial Marketing Management*, *42*(1), 106-112.

Liu, W., & Atuahene-Gima, K. (2018). Enhancing product innovation performance in a dysfunctional competitive environment: The roles of competitive strategies and market-based assets. *Industrial Marketing Management*, *73*, 7-20.

Lubart, T. I. (2001). Models of the creative process: Past, present and future. *Creativity research journal*, *13*(3-4), 295-308.

Magnusson, P. R. (2009). Exploring the contributions of involving ordinary users in ideation of technology- based services. *Journal of Product Innovation Management*, *26*(5), 578-593.

Markham, S. K. (2013). The impact of front- end innovation activities on product performance. *Journal of Product Innovation Management*, *30*, 77-92.

Miettinen, R. (2006). The sources of novelty: A cultural and systemic view of distributed creativity. *Creativity and Innovation Managemen*t, *15*, 173–181.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. Oxford University Press.

Noordhoff, C. S., Kyriakopoulos, K., Moorman, C., Pauwels, P., & Dellaert, B. G. (2011). The bright side and dark side of embedded ties in business-to-business innovation. *Journal of Marketing*, *75*(5), 34-52.

Öberg, C. (2013). Competence integration in creative processes. *Industrial Marketing Management*, *42*(1), 113-124.

Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, *39*(3), 607-634.

Ortmann, G., & Sydow, J. (2018). *Creativity in/of Organizations for Managing Things to Come: Lessons to Be Learnt from Philosophy*. In How Organizations Manage the Future, 67-88. Palgrave Macmillan, Cham.

Parjanen, S. (2012). Experiencing creativity in the organization: From individual creativity to collective creativity. *Interdisciplinary Journal of Information, Knowledge & Management*, *7*, 109-128.

Paulus, P. B., van der Zee, K. I., & Kenworthy, J. (2019). Diversity and group creativity. In Paul B. Paulus & Bernard A. Nijstad (Eds.) *The Oxford Handbook of Group Creativity and Innovation*, p. 33-49.

Pera, A. (2013). The role of social factors in the creative process. *Contemporary Readings in Law and Social Justice*, 5, 207–212.

Peronard, J. P., & Brix, J. (2017). Business Development in Interfirm Collaborations: Proposing a Theory of Social Creativity in Service Networks. *Journal of Creativity and Business Innovation*, *3*, 89-111.

Poetz, M. K., & Schreier, M. (2012). The value of crowdsourcing: can users really compete with professionals in generating new product ideas?. *Journal of Product Innovation Management*, *29*(2), 245-256.

Polverini, D., Graziosi, S., & Mandorli, F. (2011). A step-based framework to combine creativity, project management and technical development in industrial innovation. *International Journal of Product Development*, *14*(1-4), 96-117.

Quinn, J. B. (1992). The intelligent enterprise a new paradigm. *Academy of Management Perspectives*, *6*(4), 48-63.

Rodan, S., & Galunic, C. (2004). More than network structure: How knowledge heterogeneity influences managerial performance and innovativeness. *Strategic Management Journal*, *25*(6), 541-562.

Rousseau, D. M. (1985). Issues of level in organizational research. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior*, *17*, 1-37. Greenwich, CT: JAI Press.

Schmoelz, A. (2017). On co-creativity in playful classroom activities. *Creativity. Theories–Research-Applications*, *4*(1), 25-64.

Senge, P. (1990), *The Fifth Discipline: The Art and Practice of the Learning Organization*, Double Day Currency, New York, NY.

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*, *30*(6), 933-958.

Simmel, G. (1950). The Metropolis and Mental Life. In K. H. Wolff (ed. and trans.), *The Sociology of Georg Simmel*. New York: Free Press

Soda, G., Stea, D., & Pedersen, T. (2019). Network structure, collaborative context, and individual creativity. *Journal of Management*, *45*(4), 1739-1765.

Speklé, R. F. (2001). Explaining management control structure variety: a transaction cost economics perspective. *Accounting, Organizations and Society*, 26(4-5), 419-441.

Stein, M. (1963). A transactional approach to creativity, in *Scientific creativity: Its recognition and development*. New York: Wiley.

Steiner, G. (2009). The Concept of Open Creativity: Collaborative Creative Problem Solving for Innovation Generation-a Systems Approach. *Journal of Business & Management*, *15*(1).

Stenning, K., Schmoelz, A., Wren, H., Stouraitis, E., Scaltsas, T., Alexopoulos, K., & Aichhorn, A. (2016). Socratic dialogue as a teaching and research method for co-creativity?. *Digital Culture & Education*, *8*(2), 154-68.

Struyf, B., Galvani, S., Matthyssens, P., & Bocconcelli, R. (2021). Toward a multilevel perspective on digital servitization. *International Journal of Operations & Production Management*, *41*(5), 668-693

Taggar, S. (2002). Individual creativity and group ability to utilize individual creative resources: A multilevel model. *Academy of Management Journal*, *45*(2), 315-330.

Teece, D., & Pisano, G. (2003). The dynamic capabilities of firms. In *Handbook on knowledge management*, 195-213, Springer, Berlin, Heidelberg.

Thompson, L. (2003). Improving the creativity of organizational work groups. *Academy of Management Perspectives*, *17*(1), 96-109.

Tu, C. (2009). A multilevel investigation of factors influencing creativity in NPD teams. *Industrial Marketing Management*, *38*(1), 119-126.

Valaei, N., Rezaei, S., & Ismail, W. K. W. (2017). Examining learning strategies, creativity, and innovation at SMEs using fuzzy set Qualitative Comparative Analysis and PLS path modeling. *Journal of Business Research*, *70*, 224-233.

Van de Ven, A. H. (1986). Central problems in the management of innovation. *Management science*, *32*(5), 590-607.

Van de Ven, A. H. (1976). On the nature, formation, and maintenance of relations among organizations. *Academy of Management Review*, 1(4), 24-36.

Vera, D., Nemanich, L., Vélez-Castrillón, S., & Werner, S. (2016). Knowledge-based and contextual factors associated with R&D teams' improvisation capability. *Journal of Management*, *42*(7), 1874-1903.

Verona, G. (1999). A resource-based view of product development. *Academy of Management Review*, 24(1), 132-142.

Walsh, C. S.; Chappell, K. & Craft, A. (2017). A co-creativity theoretical framework to foster and evaluate the presence of wise humanising creativity in virtual learning environments (VLEs). *Thinking Skills and Creativity*, 24, 228–241.

Wang, Q., Bradford, K., Xu, J., & Weitz, B. (2008). Creativity in buyer–seller relationships: The role of governance. *International Journal of Research in Marketing*, *25*(2), 109-118.

Wang, X. H. F., Kim, T. Y., & Lee, D. R. (2016). Cognitive diversity and team creativity: Effects of team intrinsic motivation and transformational leadership. *Journal of Business Research*, *69*(9), 3231-3239.

Weick, K. E. (1995). *Sensemaking in organizations* (Vol. 3). Sage

Weijo, H. A., Martin, D. M., & Arnould, E. J. (2018). Consumer movements and collective creativity: The case of restaurant day. *Journal of Consumer Research*, *45*(2), 251-274.

Weinzimmer, L. G., Michel, E. J., & Franczak, J. L. (2011). Creativity and firm-level performance: The mediating effects of action orientation. *Journal of Managerial Issues*, 62-82.

West, D. C., Kover, A. J., & Caruana, A. (2008). Practitioner and customer views of advertising creativity: same concept, different meaning? *Journal of Advertising*, *37*(4), 35-46.

Woodman, R. W. (2008). Creativity and organizational change: Linking ideas and extending theory. *Handbook of organizational creativity*, 283-300.

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

Woodside, A. G. (2001). Editorial: Sense Making in Marketing Organizations and Consumer Psychology: Theory and Practice. *Psychology & Marketing*, *18*(5), 415–421

Yusuf, S. (2007). From creativity to innovation. *World Bank Policy Research Working Paper*, 4262. World Bank.

Zhang, Y. (2016). Functional diversity and group creativity: The role of group longevity. *The Journal of Applied Behavioral Science*, *52*(1), 97-123.