

The influence of experience and team relational intensity on critical evaluation.

Evidence from the audiovisual production.

by

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Ph.D. in Business Administration & Management

XVII cycle

2007

*To Chiara and Lisa,
without whose support
this work would not have been completed.*

CONTENTS

Abstract.....	4
1. Introduction.....	5
2. Theoretical framework.....	9
2.1 The Knowledge-Based View of the firm.....	9
2.2 The Social Network Theory.....	12
2.3 Level of analysis.....	13
3. Key concepts.....	16
3.1 Knowledge.....	16
3.1.1 Individual Tacit Knowledge.....	22
3.1.2 Collective Tacit Knowledge.....	24
3.1.3 Measuring tacit knowledge.....	28
3.2 Social Capital.....	29
3.3 Performance.....	32
3.3.1 Economic and symbolic competition.....	33
3.3.2 Measuring creative performance.....	36
4. Empirical setting.....	39
4.1 Creativity and creative industries.....	40
4.2 The audiovisual industry.....	42
4.2.2. Current TV.....	43
4.3 Tacit knowledge and team-based projects in the audiovisual industry.....	45
4.4 Performance in the audiovisual sector.....	47

5. Hypotheses.....	50
5.1 Knowledge and performance.....	50
5.2 Social capital and performance.....	52
6. Methods.....	55
6.1 Sample.....	55
6.2 Measures.....	57
6.2.1 Dependent variable.....	57
6.2.2 Independent variables.....	59
6.2.3 Control variables.....	62
7. Analysis and results.....	70
8. Discussion and conclusions.....	75
9. Limitations and further research.....	81
10. References.....	83

Abstract

Utilizing the approach of the knowledge-based view of the firm and the social network theory, this study examines the effects of the individual experience of the team leader and the relational intensity among the team members on the team-based project performance.

Recent studies show that people get useful knowledge from other people with whom they work closely and frequently, because frequent interpersonal ties facilitate access to resources, ideas, and enact routines. Many authors have argued that socially complex knowledge, especially tacit knowledge, as it cannot be codified and it must be learnt through experience as team members interact with each other, can constitute a valuable intangible resource for the organization and a source of competitive advantage.

As team members interact with each other, though, group tacit knowledge coalesces around a set of interdependent individual schemata, and it may be progressively more difficult to alter them. This could be the seed of possible negative returns to cumulative experience over time.

This study aims to investigate if there is an inverted U-shaped relationship between the stock of tacit knowledge accumulated through experience and the performance of a group. In order to test this proposition, I analyzed the critical evaluation in the audiovisual industry, by collecting data related to the critical reviews of documentaries produced from 2005 to 2006. I find support for a predicted positive relationship between shared team experience and team performance. Implications for knowledge and organizational learning literature are discussed along with suggestions for future research.

1. Introduction

When it comes to structuring a team for developing a creative and innovative project, should the team leader pick the most experienced and connected people? In other words, does a certain level of individual and shared knowledge positively affect the project performance?

There has been significant increase in the knowledge-intensive side of economic activity at the global level. Knowledge has become a prominent theme in the managerial literature (Cook & Brown, 1999) and has increasingly been regarded as one of the most critical and valuable intangible resources for firms (Nelson & Winter, 1982; Barney, 1991; Reed & De Filippi, 1990). In particular, the organizational literature have currently focused on the role of knowledge in technological innovation, in creative production (Caves, 2000), and organizational learning (Nonaka & Takeuchi, 1995; Spender, 1996a), and its relevance for sustaining firms' competitiveness (Lippman & Rumelt, 1982; Kogut & Zander, 1993; Teece & Pisano, 1998). These resource-based scholars, and, later, the knowledge-based scholars (Kogut & Zander, 1992; Nonaka, 1994; Spender & Grant, 1996; Von Krogh, Roos, & Slocum, 1994), have focused, more specifically, on the relevance of tacit knowledge much more than of explicit knowledge as a source of competitive advantage. Whereas explicit knowledge can be codified and transferred quite easily, tacit knowledge cannot be codified and formalized. It is possible to convert some tacit knowledge into explicit knowledge (Nonaka & Takeuchi, 1995), but tacit knowledge is difficult, if not possible, to codify and can never be made explicit. So, given its characteristics, tacit knowledge, when it leads to high performance, such a high performance could be sustained for a certain period of time, leading by definition to a competitive advantage position.

Moreover, studies on creative industry emphasize the relevance of knowledge and knowledge workers, arguing that economic growth is achieved through continuous innovation, and innovation is reached through the application of knowledge. Economists who have studied this process refer to knowledge as intellectual capital, describing it as a much more complex factor if compared to other factors of production, like capital and labor.

Building on this perspective and its allied literature, this paper aims to study how tacit knowledge could affect team-based project performance. In particular, as tacit knowledge could be both individual or group (or team-based) knowledge, my objective is analyzing the relationship between these two kinds of knowledge and the project performance.

In doing so, I faced the problem of codifying tacit knowledge, which is unobservable by definition (Godfrey & Hill, 1995; Winter, 1987). Indeed, if tacit knowledge could be measured directly, it could also be codified, and therefore, it would no longer be tacit. To confront this problem, I used data collected from the audiovisual industry – in particular, the documentary industry - to construct measures that tap into individual and team-based tacit knowledge. As tacit knowledge cannot be codified and must be learnt through experience, I measure individual tacit knowledge of each video making team's member as his or her individual cumulative experience in the industry, i.e. the number of video that he or she made in the past. On the other side, I measure the group (i.e. the video making team's) tacit knowledge through the analysis of the relational intensity of the ties among its members.

Coming back to the initial question, the Social Capital perspective (Gouldner, 1961; Coleman, 1988; Krackhardt, 1992) gives us good insights. It argues that the

presence of *network closure* (Coleman, 1990) within a group can support the development of strong social rules and reciprocal trust among team members. The development of such strong and long-lasting ties could support communication among the individuals and creation of common and shared languages and, thus, affect positively team performance.

In particular, when teams are characterized by low turnover, their members interact with each other and, in doing so, the individuals have the chance to construct some interpretative cognitive schemata (or patterns) required for successful mutual adjustment. Since the stock of tacit knowledge that underlies these patterns is accumulated over time through shared experience and repeated interactions between team members, the utility or value of a group's knowledge is more likely to increase as members of the group develop strong ties among them, in order to construct patterns or schemata needed for synchronicity. Nevertheless, once these patterns have coalesced around a set of interdependent individual schemata, it may be progressively more difficult to alter them. This is the seed of possible negative returns to cumulative experience over time.

A final note about the measure of performance should be done. In this study I use the video's critical evaluation as measure of the project's performance. In a sense, this position takes the distance from the traditional point of view: so far, the critical evaluation of an output has commonly been considered as one of the determinants of a project's performance. In this study, instead, the critical evaluation becomes the dependent variable and it is predicted by the individual as well as the group tacit knowledge. This reversed relation has been used more rarely in the literature (see, for example, Hsu, 2006).

Going deeper into details, I test the hypotheses that, on the one side, there is a positive correlation between team members' individual tacit knowledge and team-based project performance and, on the other, there is an inverted U-shaped relationship between the stock of tacit knowledge accumulated through team stability and the performance of a group. In order to test these hypotheses, I collected data on documentaries broadcasted by Current TV, an independent cable and satellite TV network, between 2005 and 2006.

The following section explains the theoretical approach and summarizes some key findings of prior research relevant to the empirical context under study. In section 3, I describe the key concepts and the theoretical construct. Then, in section 4, the empirical context is introduced and described. In section 5, testable hypotheses are advanced. Section 6, then, describes the research design, and the operationalization of the theoretical constructs. The results of the analyses performed on the data gathered are then provided in section 7, while sections 8 and 9 conclude the paper with the discussion of some implications and study limitations.

2. Theoretical framework

Before defining the main construct of the paper, in this paragraph the theoretical framework and the level of analysis will be briefly discussed.

Basically, the current work relies on two main streams of thought: the Knowledge-Based View of the firm (KBV) and the Social Network Theory (SNT). These two perspectives explain and give emphasis to the importance of knowledge at the individual (KBV) and at the group level (KBV and SNT) for superior firm performance.

2.1 The Knowledge-Based View of the firm

Originating from the strategic management literature, the knowledge-based view (KBV) of the firm attempts to explain the role of knowledge in differentiating firm performance (Conner & Prahalad, 1996; Grant, 1996; Kogut & Zander, 1996).

KBV's main assumption is that organizational knowledge, represented as a combination of tacit and explicit knowledge, and of collective and individual knowledge (Spender, 1996b), is the most strategically significant resource of the firm (Daft & Weick, 1984). Its proponents (Kogut & Zander, 1992; Nonaka, 1994; Spender & Grant, 1996; Von Krogh, Roos, & Slocum, 1994) argue that because knowledge-based resources are usually socially complex and difficult to imitate, they are the major determinants for superior performance and sustained competitive advantage. Superior performance and competitive advantage results from the informational advantages and reductions in uncertainty brought on from the greater knowledge that exists within the firm. Moreover, this perspective maintains that firms create competitive advantage through a cumulative activity of exploitation (Levinthal & March, 1993; March, 1991),

experiential learning and expertise (Baum, Li, & Usher, 2000; Leonard-Barton, 1992), and idiosyncratic routines (Nelson & Winter, 1982).

To the extent that it focuses upon knowledge as the most strategically important of the firm's resources, it is an outgrowth of the resource-based view (Grant, 1996). The RBV perspective, initially promoted by Penrose (1959) and later expanded by others (Wernerfelt 1984, Barney 1991, Conner 1991 and later by Priem & Butler, 2001, and Barney, 2001), explains why some firms ultimately succeed and others fail with the understanding of their resources and capabilities. A firm's resources and capabilities and, in particular their distribution inside the firm, influence both the strategic choices that managers make and the implementation of those chosen strategies. Although a given firm may possess more or less of any particular resource, only those resources that are rare, valuable, and difficult to imitate provide a sustainable competitive advantage (Amit & Schoemaker, 1993; Schoenecker & Cooper, 1998). When the strategies employed are successful in leveraging the firm's rare, valuable, and difficult-to-imitate resources, that firm is likely to gain an advantage over its competitors in the marketplace and thus earn higher returns (Hitt, Nixon, Clifford, & Coyne, 1999).

But these arguments are clear when we consider tangible resources such as buildings, machinery, or access to capital. And in the more traditional competitive landscape, these tangible resources were the most important potential sources of competitive advantage. Thus, if a firm could modernize its plant, or develop a more efficient distribution process, or access cheaper credit, it could compete successfully and prosper. But firms employ both tangible and intangible resources in the development and implementation of strategies, and as the nature of work and competition changes, intangible resources become more important. Examples of

intangible resources are reputation, brand equity, human capital, and knowledge. In fact, in any competitive landscape it has been argued that intangible resources are more likely to produce a competitive advantage because they often are truly rare and can be more difficult for competitors to imitate (Black & Boal, 1994; Itami, 1987; Rao, 1994).

If it is true that the RBV of the firm recognizes the important role that knowledge plays in firms - Wernerfelt considers knowledge as a resource required to obtain and transform other resources, and Barney (1991) includes knowledge as a separate resource on equal footing with other resources - proponents of the KBV argue that the resource-based perspective does not go far enough. Specifically, the RBV treats knowledge as a generic resource, rather than having special characteristics. It therefore does not distinguish between different types of knowledge-based capabilities. For many sectors, included the empirical setting analyzed in this work¹, knowledge is the most precious asset. Firms that belong to industries characterized by continuous innovation behave very differently from firms that base their business on a balanced portfolio of material and immaterial assets. And the KBV of the firm provides a sound approach for understanding such firms.

The KBV positions have some features that are particularly appealing and give a good and integrated theoretical framework for the purpose of this work. This approach is particularly suitable for this paper, because underline the importance of knowledge and it draws on and encompasses many of the insights developed in the RBV on the nature of competence and assets that enable sustainable competitive advantage (Barney, 1986a; Mahoney, 1995), as well as the behaviorally oriented firm theories, like the interplay between action, cognition, and a shared identity of organizational members.

¹ For a complete description of the empirical setting, see chapter 4.

Kogut and Zander (1996), for example, argue that “the knowledge of the firm has an economic value [over market transactions] when identity leads to social knowledge that supports coordination and communication. Through identification, procedural rules are learned, and coordination and communication are facilitated across individuals and groups of diverse specialized competence”.

2.2 The Social Network Theory

The second theory on which this work relies is the Social Network Theory (SNT). This is a big shift from the KBV of the firm, because its approach is a relational approach, and assumes that reality should be primarily conceived and investigated from the view of the properties of relations between and within units, instead of the properties of these units themselves. In the social science, these units are social units: individuals, groups/organizations and societies.

Basically, the SNT views social relationships in terms of nodes and ties. Nodes are the individual actors within the networks, and ties are the relationships between the actors. The first assumption is that there can be many kinds of ties between the nodes. In its most simple form, a social network is a map of all of the relevant ties between the nodes being studied. The network can also be used to determine the social capital of individual actors. These concepts are often displayed in a social network diagram, where nodes are the points and ties are the lines.

It states that competitive advantage is originated within dyads or nets of organizations. Interfirm specific assets, knowledge sharing routines, complementary resources endowments and effective governance are described as possible sources of “relational rents” (Dyer & Singh, 1998). Access to critical resources available in the

network (Gulati & Gargiulo, 1999) and resource dependence (Backer, 1990; Boyd, 1990; Pennings, 1980; Pfeffer & Salancik, 1978) are further explanations of the origin of network as sources of competitive advantage.

The power of social network theory stems from its difference from traditional sociological studies, which assume that it is the attributes of individual actors that matter.

The SNT gives a good interpretive framework for the purpose of this work, as it underlines the importance of relationships and ties among team members. This theory, integrated with the KBV of the firm, provides a valid theoretical framework for understanding the relationship between knowledge (both individual and group) and the team performance.

2.3 Level of analysis

Under a methodological and theoretical point of view, a further question concerns the level of analysis. As Singer (1961) argues: “In any area of scholarly inquiry, there are always several ways in which the phenomena under study may be sorted and arranged for purposes of systemic analysis. Whether in the physical or social sciences, the observer may choose to focus upon the parts or upon the whole, upon the components or upon the system. He may, for example, choose between the flowers and the garden, [...] and so on. Whether he selects the micro- or macro-level of analysis is ostensibly a mere matter of methodological or conceptual convenience. Yet the choice often turns out to be quite difficult, and may well become a central issue within the discipline concerned.”

One of the critical weaknesses of existing knowledge-based theories is the definitional ambiguity when it comes to the main construct, knowledge. All scholars seem to agree that there are two types of knowledge - explicit and tacit - and, they have also developed their own typologies in conjunction with their specific theories (e.g., internal vs. external knowledge, know-how vs. know-what, as so on). There is instead disagreement about the level of analysis at which knowledge is a valid concept. Knowledge studies, in fact, can refer to the individual level as well as the social level (group, organization, network).

The question of the relationship between organizational knowledge and individuals' knowledge is here introduced. In other words, we question if organizational knowledge is the sum of individuals' knowledge, or it is something more or different. Despite the relative huge amount of literature on these epistemological questions, no conclusive answers could be drawn.

Grant (1996), for example, postulates that knowledge exclusively resides in individuals. He gives emphasis upon the role of the individual as the primary actor in knowledge creation and the principal repository of knowledge. Nonaka & Takeuchi (1995) assumes that "organizational knowledge is knowledge shared by individuals", and similarly do Von Krogh, Roos & Slocum (1994) when they state that "knowledge of the organization is shared knowledge among organizational members".

Some other scholars, though, argue that knowledge is included as a multi-level concept. In particular, they add knowledge at the group and the firm levels of analysis to what had been a construct only at the individual level of analysis. March and Simon (1958), as well as Levitt and March (1988), contend that organizations accumulate knowledge beyond what is embodied in individuals through organizational learning. By

doing so, they put particular emphasis on the interactions among individuals and groups for knowledge sharing and creation (like the development of routines), and ultimately the implications of such interactions for competitive advantage (Grant, 1996; Szulanski, 1996).

If the concept of “sharing” is rather ambiguous, because it includes the different alternatives of shared knowledge as the intersection among individuals’ knowledge, on the opposite, their “summation” represents a more univocal construct. In fact, if organizational knowledge is the sum of individuals’ knowledge, then it may include also not strictly shared components. Grant seems to address this position when he talks about integration mechanisms (direction and routines) of individuals’ knowledge (Grant, 1996a; Grant, 1996b). A rather different position is shared by those scholars who think that organizational knowledge is something more than the sum of individuals’ knowledge, thus including individuals’ knowledge and the knowledge present in the relations and interactions among organizational members (Daft & Weick, 1984). The current work shares the last interpretative framework of organizational knowledge as “collective mind” (Weick & Roberts, 1993) and sets the level of analysis at the organizational level.

More precisely, in this study the organizational structure is very simple and can be intended as a team. The data I collected for the empirical test, relates to the experience shared among team members. The level of analysis, therefore, here always refers to the team level.

3. Key concepts

After the discussion of the objectives, the level of analysis and the theoretical framework underlying this work, this paragraph will outline the definition of the main concepts that build the construct of the paper, namely:

- *Knowledge*, addressed under the organizational point of view, even if connections between organizational knowledge and individual knowledge will be questioned;
- *Social capital*, consistently with the Social Capital perspective, the link between the presence of “network closure” within a group and the group performance will be discussed;
- *Performance*, exploring the existing economic and managerial literature, its definition overcomes the KBV position, and it is declined to a symbolic dimension.

Each of these three concepts assumes a particular meaning when applied to a creative empirical setting. After a clear distinction of these concepts, I will decline the meaning of the same concepts into creative industries setting.

3.1 Knowledge

As I introduced in chapter 2, knowledge is one of the key resources for organizations who try to compete in creative contexts, by introducing continuous innovations. Before examining how knowledge is created and transformed in unarticulated ways, and given the difficulty of “formalizing what is tacit”, it is better first to “unpack” the concept of knowledge.

Early organizational research treated organizational intelligence according to the learning theory school of knowledge acquisition. Like a young child (or lab animal), scholars saw an organization as a black box, constantly receiving input and producing output of diverse information. They saw managers within organizations as problem solvers who searched for solutions. They viewed management decisions as limited by “bounded rationality” (Simon, 1947), which was constrained by both time and locally determined factors of “successful outcome.” From this view of organizational intelligence, researchers believed decision making was based solely according to rational, expressible, and conscious parameters (March & Simon, 1958; Cyert & March, 1963).

A more recent and more inclusive view of organizational intelligence recognizes that human beings not only process information, they also generate knowledge (Nonaka & Kenney, 1991). This knowledge generation occurs within numerous dimensions of representation, emerging as the result of multiple interactions and processes between individuals and groups. Regardless of whether a company is manufacturing capital or consumer goods, providing consulting services or fast food, its fundamental “business activity” essentially consists of organizing individuals into group efforts that create, preserve, and then project knowledge into the marketplace, embodied in the form of services or products. In this framework, an organization’s primary function is not merely to process information, but to find a means for interpreting, creating, and promoting knowledge in order to disseminate it and the services and products that embody it more effectively than do its competitors.

More generally, the concept of individuals' knowledge pertains to the concept of human capital and abilities that allow for changes in action and economic growth (Coleman, 1988). Prior researchers have made a distinction between different types of human capital (Florin & Schultze, 2000). *Firm-specific* human capital pertains to skills and knowledge that are valuable only within a specific firm. For instance, prior researchers have examined the impact of firm-related know-how within the founding team on the success rate of high-growth start-up firms (Sandberg, 1986). Although firm-specific skills may give firms an advantage over their competitors as these skills are not transferable to other firms (Grant, 1996), the limited amount of communication and interfirm reaction attached to those skills makes this type of human capital only have a limited impact on the level of innovative activity within a region or the wider society. *Industry-specific* human capital pertains to knowledge derived from experience specific to an industry, and several researchers have examined the role of industry experience on the growth and economic performance of entrepreneurial ventures (Siegel, Siegel, & MacMillan, 1993) as well as society (Kenney & von Burg, 1999). Prior research has suggested that industry specific human capital may play an important role in the generation of innovative activity within an industry - like creative industries - if it is characterised by high-quality knowledge exchange among the main players within that industry. The presence of industry-related know-how will be in particular powerful in creating innovations when new product or process ideas result from the combination of intimate communication among network partners on the one hand and tacit know-how on the other hand. The tacit nature of industry-specific know-how makes this second type of human capital often only understandable for industry specialists and therefore offers a protective mechanism which may decrease the need for patent protection.

Similarly, Maskell and Malmberg (1999) argued that ‘cultural’ proximity matters in terms of innovation in that the exchange of tacit knowledge often requires a high degree of mutual understanding.

As shown in this brief literature review, the concept of knowledge has received great attention in business literature, and there is a relatively high agreement about the typologies of knowledge. Referring to its taxonomy, it may be useful to recall the analytical framework proposed by Nonaka (1994). According to Nonaka, knowledge can be analyzed along two dimensions: the epistemological and the ontological dimension.

- The epistemological dimension concerns the modes of expression of knowledge, namely, Polanyi’s (1969) distinction between *explicit* and *tacit* knowledge.
- The ontological dimension relates to the locus of knowledge, which can reside at the *individual* or at the *group* level.

Explicit versus tacit knowledge. The epistemological dimension pertains to the level of consciousness, awareness, and formalization of knowledge, giving rise to the distinction between tacit and explicit knowledge.

The former is often subconscious, internalized, and the individual may or may not be aware of what he or she knows and how he or she accomplishes particular results. At the opposite end of the spectrum is conscious or explicit knowledge - knowledge that the individual holds explicitly and consciously in mental focus, and may communicate to others. In simple words, tacit knowledge is what is in our heads, and explicit

knowledge is what we have codified. This distinction is made even clearer from the seminal work of Polanyi (1962), in which he stated that: “We can know more than we can tell”.

The tacit aspects of knowledge are those that cannot be codified, but can only be transmitted via training or gained through personal experience. Alternatively, tacit knowledge can be understood to be knowledge that is embedded in a culture (for instance a regional culture, organizational culture or social culture) and is difficult to share with people not embedded in that culture. Tacit knowledge has been described as “know-how” (as opposed to “know-what” or facts, “know-why” or science and “know-who” or networking). It involves learning and skill but not in a way that can be written down. The knowledge of how to ride a bike is an example: one cannot learn to ride a bike by reading a textbook, it takes personal experimentation and practice to gain the necessary skills.

This distinction between tacit and explicit knowledge is the reason often cited for distinguishing knowledge from other resources (Kogut & Zander 1992, 1996). As observed by Lam (2000), the critical differences between them lie in three major areas. The first area regards the codifiability and mechanisms for transferring knowledge. Whereas explicit knowledge can be codified and transferred quite easily, tacit knowledge cannot be codified and formalized. It is possible to convert some tacit knowledge into explicit knowledge (Nonaka & Takeuchi, 1995), but much tacit knowledge is difficult, if not possible, to codify and can never be made explicit. Nonaka and Takeuchi (1995), moreover, argue that a successful organization needs, on the one hand, to convert internalized tacit knowledge into explicit codified knowledge in order to share it, but also, on the other hand, for individuals and groups to internalize and

make personally meaningful codified knowledge once it is retrieved from the organization.

Second, the main methods for the acquisition and accumulation of these two knowledge forms also differ. Explicit knowledge can be acquired by formal studies (i.e. by reading manuals or listening to lectures). Tacit knowledge, in contrast, can only be learnt through experience in the relevant context (learning-by-doing).

Third, the two forms of knowledge differ in their potential for aggregation and modes of appropriation. Explicit knowledge can be “aggregated at a single location, stored in objective forms and appropriate without the participation of the knowing subject” (Lam, 2000). Tacit knowledge, in contrast, is personal, contextual and cannot be easily aggregated.

Individual versus group knowledge. Going back to Nonaka’s taxonomy, the ontological dimension of knowledge refers to the unit of analysis or, in other words, the *locus* of knowledge. The major distinction refers to *individual* knowledge, which has long been investigated by psychological research and studies, and the *group* knowledge, including team, organizational, and network levels (Nonaka, 1994).

The main assumption of this dimension is that there is a distinction between individuals and teams when it comes to knowledge creation. In particular, knowledge is created by individuals and it could be transformed into collective knowledge. A team or an organization by itself cannot create knowledge without individuals, but it can support creative individuals or provide a context for such individuals to create knowledge, as collective knowledge sometimes leads to higher performances.

The combination between these couples of alternatives (explicit versus tacit, on the one hand, and individual versus collective, on the other) makes it possible to label different typologies of knowledge (Spender, 1996): “conscious” when knowledge is individual and explicit, “automatic” when knowledge is individual and tacit, “objectified” when knowledge is social and explicit, and “collective” when knowledge is social and tacit.

In this study I will focus on the tacit knowledge, which could reside at the level of the individual or of the group. After describing what is specifically meant by individual and collective tacit knowledge (paragraphs 3.1.1 and 3.1.2), I will propose a measure for tacit knowledge (paragraph 3.1.3).

3.1.1 Individual Tacit Knowledge

Individual tacit knowledge is a repertoire of knowledge owned by the individuals. At the level of an individual, the concept of tacit knowledge is closely related to the concept of skills (Nelson & Winter, 1982; Polanyi, 1969). For example, it is tacit knowledge that a great baseball player uses when hitting a home run (Berman, Down & Hill, 2002). Individual tacit knowledge operates unconsciously in the background and it is difficult if not impossible to articulate. For example, we all know of athletes (soccer players, basketball players, skiers, etc.) who always seem to be at the right place on the field, rink, or court, or to do the right thing at the right moment. They are amazingly intelligent in practice, but almost totally awkward when it comes to articulate their performance.

The impossibility for individuals of articulating their tacit knowledge occurs just because it is mainly unconscious, as it is accumulated in individual mind through process of learning-by-doing (Lam, 2000; Cook & Brown, 1999). Thus, individual experience accumulated in the relevant context affects deeply the stock of tacit knowledge accumulated in individuals' mind. In fact, tacit knowledge involves pattern recognition and problem-solving abilities gained mainly through cumulative experience in the relevant context (Katz, 1982; Levitt & March, 1988). With practice people can develop their skills, for example, in information gathering and processing, or in generating new procedures and conclusions. Therefore, greater experience permits greater refinements and improvement of individual skills (Nass, 1994).

Accordingly, many authors have demonstrated how film studio executives rely on their prior experience when selecting a project (Jones et al., 1997; Squire, 1992). In fact, as noted by Mike Medavoy, Chairman of TriStar Pictures (Squire, 1992): "From the business standpoint, having negotiated or being responsible for the negotiation of countless talent and picture agreements, there are references to cash and expertise tucked away in memory that are always called upon. Formulas are connected to faces connected to credits. The creative and business disciplines blend via a sort of mental checklist which evolves over years and is the source of *intuitive reactions* when putting together a motion picture deal". These "intuitive reactions" are honed over years of experience and are embodied in the individuals, constituting the individual tacit knowledge.

3.1.2 Collective Tacit Knowledge

Collective tacit knowledge refers to the ways in which knowledge is distributed and shared among members of a group or a team (Lam, 2000). Group tacit knowledge is the accumulated knowledge of a group stored in its rules, procedures, routines and shared norms which guide problem-solving activities and patterns of interaction among its members.

In particular, KBV scholars highlight the problem of coordinating the specialized knowledge embodied in people. They propose some mechanisms for coordinating the specialized knowledge:

1. Rules: which include social norms, and procedures;
2. Sequencing: each specialist's input occurs independently in his own time slot;
3. Routines: or coordination by mutual adjustment - can support a high level of simultaneity of individuals performing their own specialized tasks;
4. Group problem solving and decision making: unlike mechanisms which seek efficiency through minimizing communication, complex and uncertain tasks require more personal contact and communication.

While these mechanisms are ways to coordinate the specialized knowledge of people, coordination also depends on the existence of a common knowledge among members. In this study, I take into account both the specialized individual knowledge, and the common knowledge shared among team members.

Types of common knowledge include:

1. Language and other forms of symbolic communication;
2. Commonality of specialized knowledge: this is paradoxical but the more specialized knowledge two people have in common, the more sophisticated their communication can be. Of course, the purpose of the communication is to share the specialized knowledge so if two people have the same knowledge, there's no benefit from integration but if they have entirely separate knowledge bases, then integration can't occur except at a very basic level.
3. Shared meaning: common mental frameworks allow for the transfer of tacit information. Metaphors and analogies are vehicles for reconciling different individual experiences.
4. Recognition of knowledge domains: need to know what others know in order to coordinate with them.

The ability of a firm to integrate knowledge held by individuals within the organization creates its competitive advantage. When employees are mobile, the organizational capability depends not only on the integration mechanism but also on the specialist knowledge that people possess. This makes increasing common knowledge as important as deepening specialist knowledge.

Like individuals, groups in organizations can have difficulty in identifying and analyzing the collective knowledge they possess, when it is expressed in a dimension other than the explicit. Tacit knowledge possessed in groups is frequently used but usually not articulated. The knowledge that can be expressed in words, numbers, spreadsheets, graphs, and organizational flow charts represents only a partial picture of a working group's essential knowledge. But collective tacit knowledge may constitute a

company's most valuable "competitive advantage." In fact, empirical studies have demonstrated only a very weak correlation between profits and the formalization of planning within a firm (Grinyer & Noburn, 1975).

Weick and Roberts (1993), drawing on prior work by Wegner and his associates (Wegner, 1987; Wegner, Erber & Raymond, 1991; Wegner, Giuliano & Hertel, 1985), have postulated that knowledge relating to group activities may be stored in something akin to a "collective mind". A collective mind can be described in terms of "a distinct higher-order pattern of interrelated activities" grounded in and emerging from "individual actions" (Weick & Roberts, 1993). Just as individual mind is located in the specific activities individuals engage in, so the collective mind is manifested in the way in which individuals interrelate their actions. More specifically, individuals "construct their actions (contribute) while envisaging a social system of joint actions (represent), and interrelate that constructed action with the system that is envisaged (subordinate)" (Weick & Roberts, 1993).

For illustration, envisage a complex task that requires coordinated action and mutual adjustment among a numbers of individuals in order for it to be executed with precision. In this case, each individual has a role that he or she is assigned to. Each individual lacks the full knowledge required to undertake the roles of others and, thus, the knowledge required to perform the complex task is diffused among individuals. Nor is the knowledge purely technical: it has an important interpretative component. The effectiveness with which individuals perform their prescribed tasks depends on their interpretation of how others are simultaneously performing their tasks while adjusting to unpredictable environmental events. Thus, a constant process of mutual adjustment and synchronization is required for the collective task to be executed with precision.

The knowledge required for a team to perform such a task with a relatively low error rate requires practice with each other. It has a strong experiential component, because, without the experience of working with each other, the individuals will not have had the chance to construct the interpretative cognitive schemata (or patterns) required for successful mutual adjustment. This kind of experiential group knowledge is tacit. Therefore, the group's related pattern-recognition capability that each individual draws upon is itself an unconscious and difficult-to-articulate skill.

In sum, group knowledge is the combination of individual cognitive schemata, patterns, or gestalts acquired through mutual experience and expressed through unconscious synchronicity of action when the group is confronted with complex tasks. Synchronisation involves getting each team member to focus their efforts in the same direction at the same time, thus cooperating to make rapid progress, rather than competing. As an explanatory metaphor, consider the 'performance' of horses drawing a coach: if they pull in the same direction, the coach will make rapid progress; if they are not harnessed together, and pull in different directions, the coach might not even move at all. Synchronisation can be achieved by identifying the team roles that it would be appropriate to use, and by using the team roles in unison, that means that everyone should undertake his or her role at the same time.

The utility (in terms of group performance) of this knowledge depends on several factors, such as, for example, the environmental context within it is used, time pressure or the stability of group's composition.

Tacit knowledge - individual as well as collective - may seem a simple idea but its implications are large and far reaching. If important knowledge is tacit, then it cannot be

effectively spread through an organization. This means that useful knowledge will not be able to reach those who need it without direct, face-to-face contact. It also means that training newcomers in an organization becomes more time consuming, because they must be given time to learn on their own while doing, which reduces overall efficiency. In order to collectivize and spread tacit knowledge, organizations must invest greatly in the human capital of its members.

3.1.3 Measuring tacit knowledge

Since tacit knowledge is not directly observable or measurable, it becomes a construct whose existence and properties can only be inferred through individual capabilities that are manifested in observable action (Stehr, 1992). Lee (2001) stated that if explicit knowledge can be clearly articulated in written documents and it is easily codified and shared asynchronously, implicit knowledge is embedded into an individual's experience, it is intuitive, and communicated most effectively in face-to-face encounter. Sharing this idea, in this study I use the measure of experience as a proxy for tacit knowledge.

In order to understand the link between knowledge and experience, we have to refer to the theoretical definition of knowledge. Most of the knowledge-based view scholars do not clearly articulate this relationship between task or behavior and knowledge. A definition of knowledge that integrates across the views of several different fields and scholars could be the following: knowledge is information whose certainty is given by a specific context (Arrow 1962a, 1969), which creates space for a justified true belief (Nonaka, 1994; von Krogh, Ichijo & Nonaka, 2000) and gives an

individual the capacity to act (Stehr 1992). Thus knowledge is only identifiable through the observation of action. This differentiates knowledge from resources, which can be identified without observable action. By defining capabilities as the capacity to act, we deduce that knowledge, in conjunction with resources, gives the firm its capabilities, and that the existence of capabilities is the prerequisite for potential action of any kind. Conversely, the observation of action by the firm demonstrates the existence of capabilities, and the existence of capabilities inherently identifies the presence of knowledge, even if knowledge itself cannot be directly observed.

3.2 Social Capital

The second key concept that builds the construct of this paper is social capital. To better understand the meaning of social capital, it is worth taking a step back to the social network theory.

In fact, one of the reasons why social network theory is studied is that by understanding the mappings connecting one individual to others, one can evaluate the social capital of that individual. Social capital refers to the network position of the object or node and consists of the ability to draw on the resources contained by members of the network. Basically the more mappings a person has in the social network and the more mappings these people have, the more knowledge, influence, and power the original person will control. The concept of social capital is connected to the concept of collective knowledge, as described in the previous paragraphs.

The stability and the longevity of a group could affect the effectiveness of collective tacit knowledge. In fact, the stock of tacit knowledge that characterizes the group does not emerge fully formed at the moment a group is constituted, but is

accumulated over time through experience and repeated interactions among a team's members. Other things being equal, high turnover in a group could disrupt the ability of members to draw upon experientially constructed schemata in order to operate in a synchronous fashion (Berman et al., 2002).

Therefore, the utility or value of a group's knowledge is more likely to increase as members of the group develop strong ties among them, in order to construct patterns or schemata needed for synchronicity. This idea is consistent with the Social Capital perspective, according to which the presence of "network closure" within a group can increase group performance (Coleman, 1990). In this case, the presence of close relational networks, in which all actors are connected to each other, is seen as favouring the development of strong social rules and reciprocal trust. The development of such dense networks is typically associated with strong and long-lasting ties that encourage communication among the parties and creation of common and shared languages. From an organizational point of view, an organization or a group characterised by strong ties approaches the model of a *clan* (Ouchi, 1980) and can, therefore, exploit all of the advantages typically associated with this kind of organization, such as a reduced potential for opportunism and the development of reciprocity (Gouldner, 1961). Many studies (e.g. Eisenhardt & Scoonhoven, 1990; Pelled, Eisenhardt & Xin, 1999) have supported the idea that the presence of strong ties within a group could have positive effects on its performance, facilitating the creation of routines, common languages and trust within the group.

Nevertheless, there are also reasonable theoretical and empirical grounds for believing that the relationship between group longevity and performance is non-monotonic in form, so that the stock of valuable group knowledge is subject to

diminishing returns over time. For example, Katz (1982) in his study about R&D teams dedicated to innovative tasks found an inverted U-shaped relationship between the duration of the relationships within a team and its performance. Similar results has been found by other authors, such as, for example, Bantel and Jackson (1989), Berman, Down and Hill (2002), Hansen (1999) or Jones and her colleagues (1997).

These results suggest an inverted U-shaped relationship between the value of group knowledge and cumulative experience. In fact, initially repetition leads to rapid improvements in productivity as an individual or a group learns to perform the task more efficiently. However, after some time, much of what there is to learn has been learned, and learning-based improvements in productivity begin to decline, reflecting diminishing returns. For example, Katz (1982) suggests rapid learning once a new group has been formed, followed by a tapering off as the group's members learn too much about each other and their mode of operating.

In this way, after an initial learning period, in which schemata are formed, backed by a stock of tacit knowledge, and a level of synchronicity is obtained, modifications may be made to core schemata on the basis of further experience, but the basic patterns are probably set. Once the collective knowledge has coalesced around a set of interdependent individual schemata, it may be progressively more difficult to alter them and a process of knowledge ossification could occur: thought process and schemata become routinized around a taken-for-granted way of interacting.

This routinization process might limit variation, which in some contexts is a highly desirable attribute, as for example in such contexts characterised by a logic of *exploitation*, which includes “such things as refinement, choice, production, efficiency, implementation, execution” (March, 1991). An example is offered by Weick and

Roberts (1993) who talk about teams that operate the flight decks of aircraft carriers and that “are required nearly error-free operations all time, because otherwise they are capable of experiencing catastrophes” (Weick & Roberts, 1993).

In contrast, in other contexts – like the more creative sectors - in which, for example, teams have to carry out highly innovative and uncertain tasks, routinization might have negative consequences. In fact, once the group action has a coalesced the way of doing things, it may be less open to new routines that upset its equilibrium. Individuals within the group may be unwilling or unable to adopt new modes of behaviour, particularly if they involve the unlearning of existing tacit routines. In this way, relational longevity and the simultaneous creation of routine may be detrimental by limiting the group’s creativity and ability to break with the past patterns.

3.3 Performance

The third key concept that has to be defined is *performance*. This concept, usually assumed as the dependent variable, can have different forms and can be measured differently according to the particular empirical setting in which the study is conducted. What every theoretical perspective agrees upon is the direct link between performance or, better, superior performance, and the competitive advantage position of the firm. Therefore, here I will first introduce the theoretical meaning of competitive advantage, and then, I will expound the differences between the traditional economic competition and the symbolic competition, given the fact that the empirical study of this paper focuses on a creative sector, and finally, I will provide a measure for creative performance.

3.3.1 Economic and symbolic competition

Within the economic and managerial fields, the construct of firm's competitive advantage has represented one of the major theoretical pillars. The popularity of this research issue can be easily understood looking at the implications generally associated to competitive advantage: i.e. firm's superior performance (Prahalad & Hamel, 1990; Wernerfelt, 1984), innovation (Eisenhardt & Martin, 2000; Iansiti & Clark, 1994; Schumpeter, 1934; Teece, Pisano & Schuen, 1997), survival and sustainability (Hannan & Freeman, 1989; Stinchombe, 2000), rents above normal returns (Amit & Schoemaker, 1993; Barney, 1986b; Dyer & Singh, 1998; Grant, 1991; Makadok, 2001; Peteraf, 1993; Spanos & Lioukas, 2001), and the like.

An analogous attention has been devoted not only to the "effects" of competitive advantage, but also, and above all, to its "determinants". Whereas sustained superior performance does justify the interest in the topic, the roots of competitive advantage are critically relevant for its managerial and practical implications, giving managers the hints and leveraging options in order to successfully manage the firm (Cockburn, Henderson & Stern, 2000).

In order to explain why certain firms obtain and maintain a competitive advantage over others, KBV theory explains the relationship between knowledge and performance. Actually, the knowledge-based theory of the firm is still a contested and unmapped terrain. Most theories either do not address performance at all or simply state that a certain knowledge capability (variously, absorptive capacity, innovation, combinative capabilities, knowledge transfer, and protective capabilities) will give a firm competitive advantage and thus lead to performance. Although organizational theory provides several contributions to the development of a KBV, the issue of the

relationship between knowledge and firm performance is largely unaccounted for by this stream.

The understanding of performance, though, is not straightforward when it comes to deal with performance in creative and symbolic sectors or, more generally, in industries in which competitiveness is based on knowledge creation and innovation. Before defining a measure for performance in our empirical setting, it is worth deepening and clarifying the meaning of traditional economic competition and symbolic competition, the two dimensions of competition.

Empirical research carried out in various social sciences has acknowledged the radical changes occurring in the interrelations between the social and the economic domain. Business historians (McKendrick, Brewer and Plumb, 1982; Williams, 1982; Mukerji, 1983), sociologists (Bourdieu, 1984; Baudrillard, 1988; Wernick, 1991; duGay, 1997), anthropologists (Douglas and Isherwood, 1979; McCracken, 1988), and consumer behaviorists (Hirschman and Holbrook, 1980; Belk, 1988) converge on the idea that in the Western world issues of culture and lifestyle are increasingly affecting consumers' decisions.

The two dimensions of the industry sector, the symbolic and the economic dimension, have created a dual competitive battlefield upon which companies are constrained to compete. In any business, economic competition is a company's ability to produce more turnover, profits and capture greater market share (citing only the most diffused parameters) than its competitors. The notion of economic competitive success is both widespread and shared by the global marketplace. When any sector analysts publish their list of 'Top Companies', they are ranking companies by turnover or gross sales, net profits, net financial position and growth percentage rate. The symbolic

competitive edge, on the other hand, is more intangible and identifying success parameters is not always an easy task. Symbolic competition is then taken to mean a firm's ability to affect tastes, to propose new and distinctive products and above all to be recognized and appreciated as innovative.

The clash between creativity and the traditional economics runs deep. Perfect competition is the central paradigm economists have relied on to describe capitalist economies. This paradigm relies upon few simple principles. Basically, the recipe for producing a good or a service is a mix of labour and capital required for making the product. The goal of maximizing profits induces each firm to produce the good at the lowest possible cost, given the prices of "ingredients". If many firms compete, and all of them can use the same recipes, no firm can charge more than the lowest cost at which all competing firms can make the product. If it did, a competitor would offer the product at a lower price and make a profit doing so. If prices of inputs change, firms may adopt a different recipe, but they will still seek to produce at lowest cost, and competition will still force firms to charge no more than the new lowest cost. Thus, a consumer buys from firms that, in their own self-interest, produce products as efficiently as the consumer could wish and charge prices that reflect the lowest possible production cost.

But this paradigm was formulated when direct production of goods and services dominated work; in an age in which innovation is such an important economic activity, where millions of workers are employed in creative activities, such as designing, inventing, and marketing new products, maybe this paradigm is not solely appropriate any more.

In light of what summarized above, competition depends largely on the nature - in a broad sense - of the product. I assume that symbolic competition takes place when the

products accord self-regarding utility – and I call them creative goods – while the economic competition takes place when goods are substantive, which means that they confer welfare utility in the sense of pecuniary benefits.

When we deal with creative firms, we must be aware that their products have particular features that distinguish them from ‘traditional’ products. Creative goods enter the utility function in a way which differs from substantive ones. The quest after symbolic utility satisfies the tastes for pride, prestige, and self-identity, while the quest after substantive utility amounts to the standard notion of satisfaction ranging from warmth, aesthetics, food, to medicine, and comfort. The investments that consumers make in using a product make that product more valuable. We learn about the true value of creative products only with experience and because consumers appreciate and invest in new products only over time – and in doing so enhance their value. So, it takes a long time to know how valuable any given piece of creativity is.

3.3.2 Measuring creative performance

Not only is measuring the performance of creative goods difficult, but the task is made harder because many of the classical economic measures implicitly assume perfect competition.

The goal of this paper is not to provide a general theory of symbolic utility, but it investigates the difference between symbolic and substantive utility, as it is seen by the main economic theories, in order to find a valid measure for a creative performance.

As Lampel, Lant & Shamsie (2000) pointed out, “cultural goods are experiential goods; they derive their value from subjective experiences that rely heavily on using symbols in order to manipulate perception and emotion. [...] The unpredictability of

such a subjective experience makes it extremely difficult to identify and establish clear standards of quality. [...] Basic notions of quality tend to remain contestable in cultural industries. Whereas in industries where goods are utilitarian, producers usually develop a consensus on specific and often measurable standards of quality, in cultural industries standards represent abstract ideals rather than specific product attributes". As for any other product, personal tastes play a significant role in consumption behaviour, even if in this specific context, tastes emerge from distinctive processes. The consequence of this specific situation is that demand of cultural goods is uncertain and it results particularly unpredictable by managers, who are more likely to rely on their insights into the subjective experience of consumers.

The paper's position is critical of neoclassical theory of consumption which, if it recognizes symbolic effects, treats them as no different from substantive ones. Rather, the paper assumes the mainstream sociological theory which models symbolic tastes as functions of social approval, cultural forces, and socialization processes (Douglas & Isherwood, 1979). In other words, the performance of creative goods is here measured with references to peer group evaluation and social approval, rather than with economic indicators.

This kind of evaluation engenders the sense of admiration or the lack of it. Admiration may become expressed in prestige goods, goods which symbolize the sense of one's rank. The degree of admiration is a function of the ranking of one's ability. The agent wants to celebrate this ability as a potential of learning and development which may generate greater output in the future. The sense of admiration depends on the comparison of self-ability with the ability of others, and it is mainly contingent on the judgment of spectators. The appeal to observers is relevant with regard to measure

creative performances because when one purchases a prestige good – or, in our case, watches a video -, one expresses true evaluation of ability in relation to a standardized one.

As Veblen (1979) and others (Bernheim, 1994; Kuran, 1995) have noted, the attention of worthy spectators, which is what is called “reputational utility,” is crucial for product evaluation. Many authors characterize the approval of others as a source of utility which is worthwhile in itself. Ronald Dworkin (1978) argues that “external preferences”, arising from the desire to conform to public opinion, differ from “personal preferences,” true preferences such as what to eat and whether to exercise. However, such external preferences can be viewed as hidden private preferences, a roundabout way undertaken by observers to smooth the feeling of self-deception.

However, the social approval becomes necessary if the agent wants to preserve and even advance his position and reputation which acts as indicative of accomplishments and good performances.

4. Empirical setting

As I argued introducing the construct of the study, my focus is tacit knowledge (both at the individual level and at the group level), and social capital, which implies the importance of team-based activities.

The construct of the paper determines the choice of the empirical setting. As specified in the introduction, I focused this research on one of the creative industries: the audiovisual production. Its main characteristics make this sector particularly suitable for this study. Besides its specific features, the choice of focusing on a creative setting is also due to its strategic significance in modern society. Howkins (2001) argues that we should think of the new economy as being built around the “creative industries”. In fact, practitioners relate this industry simultaneously to several areas of interest:

- Significant industry development as we move into the ‘knowledge economy’
- Quality of life as reflected in culture, self-expression, and identity
- The building of ‘knowledge banks’ which will become the valuable and tradable intellectual property of domestic industries, producers and creators

In this chapter I will outline the meaning of creativity and creative industries (paragraph 4.1), the features of the specific empirical setting chose for the hypotheses test (paragraph 4.2), then I’ll outline two characteristics of this sector which are particularly relevant for my investigation (i.e. the importance of *tacit* knowledge and the importance of *team-based* projects, in paragraph 4.3), and, finally, I’ll draw some considerations about the meaning of performance in this setting (paragraph 4.4).

4.1 Creativity and creative industries

May (1959) defines creativity as “the process of bringing something new into birth”. Bilton (2006) and DeGraff & Lawrence (2002) are more radical and claim that creativity cannot exist without value or application. They define creativity as “a purposeful activity (or set of activities) that produces valuable products, services, processes, or ideas that are better or new”. Innovation or novelty is primary, but without value, unless creativity is also useful and purposeful.

There are different approaches to defining the creative process. One of the most popular is the so-called Creative Problem Solving process (Osborn, 1957). This process describes three procedures: fact finding, idea-finding and solution finding. Osborn stresses that each of these steps “calls for deliberate effort and creative imagination”. Kristensson and Norlander (2003) refer to creativity as “a unique and complex human capability that, on the group level, is tightly interwoven with communication”. They point out that many problems in creative processes can be traced back to failures in communication. As this research has shown, this also holds for creative processes in the audiovisual business. Processes in this industry are characterised by the fact that in many cases different creative people are involved (e.g. director, editor) and the level of communication between these creative individuals can determine the success or failure of a project.

Management scholars usually address to “creative industries”, as sectors like music composition and production, film, television and entertainment, software animation and computer games, print media, advertising, graphic design and marketing, architecture, book and magazine publishing, the visual arts and design, the performing arts, sound recording, fashion, and toys (Caves, 2000). The developing of a

film, or more generally the audiovisual production, require a careful combination of art and commerce, of commercial salability and innovation in concepts, meanings, images and sound.

Consumer research suggests that the value consumers attach to a product is based on a set of perceived functional, emotional and symbolic benefits (Hirschman and Holbrook, 1982; Park, Jaworski and McInnis, 1986). Many products combine functional and symbolic aspects and so satisfy different kinds of consumer needs. Further, the aesthetic qualities of the product – how a product looks, what it communicates, etc. – are important not only for the aesthetic experience that they provide, but also for the intellectual meaning that they evoke through cognitive associations (Holbrook and Hirschman, 1982), or because they offer a concrete reference for a deliberate attempt to develop and convey a set of meaning through symbolic allusions and formal principles of design (McCracken, 1988).

The growing importance of symbolic products in modern consumer culture has led to an equally impressive growth in the number and size of companies that produce products with a highly expressive content (Schmitt and Simonson, 1997; Pine and Gilmore, 1999; Olins, 2001). This broad trend is leading to an increasing awareness and rising concern among management scholars of the relevance of these phenomena. In the management field, borrowing a term originally coined by Paul Hirsch (1972), Lawrence and Phillips (2002) recently referred to these products as “cultural products” and they associate them to what they call “interpretative consumption”. They observed how management research has only begun to explore unique problems associated to cultural production. While Hirsch essentially referred to goods like sports, movies and books, Lawrence and Phillips distinguish between two broad types of cultural products, which

they call entertainment and fashion. The first category refers to all those cases (movies, popular music, performing arts, etc.) in which customers essentially enjoy the emotional feeling associated to the act of symbolic consumption itself. Research in sociology and management has generally referred to these cases as cultural industries (Hirsch, 1972; Lampel, Lant and Shamsie, 2000). The second category refers to all those cases (fashion apparel, jewellery, perfumes etc.) to which the need for self-expression (Sirgy, 1982; Belk, 1988) or social recognition (Bearden and Etzel, 1982) is associated.

Borrowing terms from research on consumer behavior, then, we could say that the benefits that entertainment products deliver to the consumers are mainly instrumental, while products that can be retraced to the fashion product category are rather expressive. In this respect, firms engaged in symbolic value creation differ from companies belonging to the so-called cultural industries in that while the former produce and deliver “expression” the latter produce and deliver “entertainment” or “experience” (Lampel, Lant and Shamsie, 2000).

4.2 The audiovisual industry

In order to test the effect of experience on critical evaluation, I chose to focus on the audiovisual industry. In particular, I built a dataset of the video documentaries broadcasted by Current TV, a new concept of television network between the Internet and TV.

This is an interesting setting because the documentary production is becoming a very relevant industry from the economic and cultural point of view. In particular, nowadays there is an increasing awareness that a game or a battle is going on in the audiovisual arena which will be decisive for the economic development of the industry

and, moreover, for the cultural development (increasingly linked to the production and circulation of “symbolic” goods) of culture. The audiovisual industry is therefore a central element in the raising of crucial questions concerning the unremitting construction of cultural identities, as well as the promotion of a culture in the context of rapidly advancing processes of globalisation. The documentary has a special role to play in this field, because of its double identity: it is, at the same moment, an economic and a cultural good.

Moreover, this way of spreading news and information is going to become the future of communication all over the world. This trend is taking place because:

- the two worlds, the web and TV, are converging thanks to the low costs of broadbanding;
- “web addicted” users – who are raising in number - watch very little TV and spend much their time in front of the PC;
- internet advertising revenues – although still much lower than TV advertising revenues – are dramatically increasing;

Google and Yahoo! - although big competitors as web search engines - “cohabit” strangely on the same “web TV” platform (Current TV), keeping their own peculiarities and trying to diversify the offer.

4.2.2. Current TV

Current TV is an open-source US-based independent media company with a national cable and satellite network. It’s a TV made by independent creators - anyone

with a camera, a drive and a story to tell. In other words, it permits TV viewers to choose the programming schedule and broadcast their own personal videos all over the world. It serves as a bridge between the Internet and TV by allowing people to customize what they watch.

Beyond being a cable channel and a satellite, it broadcasts its programs on the web. The two main web search engines – Google and Yahoo! – have their own room inside the Current TV programming schedule (Google Current and Yahoo! Current Network). They have a few minute strip every hour (“Google’s Top Searches”) in which they show Googlers’ most wanted videos of the day and Yahoo! users’ own made videos. Additional content is purchased by the channel through commercial methods.

Instead of packaging its programming in 30- and 60-minute blocks, Current TV shows segments 3 to 10 minutes in length - to hold the attention of channel-surfing multitaskers - that are to be shuffled throughout the day like songs on a radio station. Some are minidocumentaries, produced in-house or by outsiders; others are feature-oriented, on all kinds of subjects.

They can produce what they watch through “Viewer Controlled Content”, or VC², pieces submitted via the Internet. VC² makes up about a third of the channel - but that share is growing. There are many categories of VC²: Pods, Promos, V-CAMs, Mobile, and Raw Intel.

Anyone who wants to contribute can upload a video on the Internet. Then, everyone in the Current TV online community votes for what should be on TV. The best content is surfaced by registered users through a voting process called “greenlighting”. The “greenlighting” process is entirely public and shown on the website (everyone can only greenlight a pod once). Greenlighting is not a comparative

judgment, e.g. “This is better than that.” Rather, for each pod the viewer watches, he should simply ask himself: “Is this good enough for TV? Would I tell all my friends to watch this? Does it accurately reflect Current’s programming mission of reflecting what is current in the lives of young people?”. If the Current TV committee likes the video and exercises the option to buy the pod, the authors are paid from \$100 up to \$1000.



Current hourly programming schedule

4.3 Tacit knowledge and team-based projects in the audiovisual industry

Given the focus of the main construct on tacit knowledge (rather than explicit) and on social capital (which implies a team-based organization of work), few settings

would have been suitable for the hypotheses testing. The documentary production provides an appropriate setting, due to its characteristics.

In the video production, tacit knowledge plays a fundamental role because the activity of making a documentary is characterized by the local proximity of the resource (i.e. human resources). Spatial proximity typically implies direct and repeated contacts – what is called ‘a socialized process’ - among people and enhanced the sharing of tacit knowledge, which can only be transmitted informally. The video producer, the sound, and the digital technicians work closely on their project, they exchange knowledge, they have a high degree of mutual trust and understanding and a common language and shared norms and values that play an important role for the success of their product. The benefits that are derived from spatial proximity and human interactions are about more than just minimizing transport costs, proximity encourages the exchange of knowledge and tacit information which is often embedded in the knowledge and experiences of the workforce upon which successful collaborations are based.

The second point that makes this sector adapt for my investigation is its project-based structure. The documentary industry is characterised by the prototypical nature of its products. This means that everybody involved in their production and distribution adopts a project-based organisational structure based on a set of relationships that are more or less stable over time (De Filippi & Arthur, 1998). As Caves (2000) argues in his book on creative industries, some creative outputs need only a single creative worker: for example, the artist that paints a canvas. Many, like videos, require diverse skilled and specialized workers, each bringing personal tastes with regard to the quality or configuration of the product. A cinema movie result from the efforts of many

different artists, each with different skills and aesthetic values and thus with potentially conflicting preferences that are pressed upon the director who coordinates their efforts.

Videos – like cinema movies - are projects that require the coordination and integration of a wide range of very different specialised skills, and make it essential to have facilitated access to the skills necessary for each project (Robins, 1993; Miller & Shamsie, 1996). Therefore, a documentary project could be seen as an uncertain and complex, rather than a routine activity. The making of a documentary could be considered an idiosyncratic work that requires a large repertoire of skills and a great degree of discretion at the operational level. The differences in the performance, success and prestige of a project are due to some extent to the characteristics of the individuals involved in the project and composing the team.

4.4 Performance in the audiovisual sector

At this point it is worth explaining the understanding of performance in our empirical setting. If the construct have determined the choice of the audiovisual sector, because of the relevance of tacit knowledge and team-based projects in this context, the definition of performance is a consequence of the choice of this particular setting. In particular, I measure performance with the peer critical evaluation of the products.

According to the definition given by Caves (2000), the video making industry belongs to the creative industries, and creative firms have their battle for success in the symbolic arena. The symbolic competitive edge is more intangible and identifying success parameters is not always an easy task. Symbolic competition is then taken to mean a group's ability to affect tastes, to propose new and distinctive styles and above all to be recognized (and appreciated) as innovative. For example, in the fashion

industry, editorials, magazine cover pages as well as participation in world-class fashion shows can be considered indirect indicators of symbolic success. Designers battle it out to conquer and maintain the highest place amongst creativity rankings compiled and legitimated by the media, however consensus on the criteria at the root of those very rankings is all but unanimous.

Like fashion - according to the definition of creative industry that emerges by the brief literature review in paragraph 4.1 - I can argue that video documentaries broadcasted on Current TV belong to the category of expressive products, rather than to the category of instrumental products. Even if the movie production is included in the former category, the production of short videos (like the ones broadcasted on Current TV) has characteristics that make its products closer to the expressive products, as they deliver “social recognition” (Bearden and Etzel, 1982). As Caves (2000) clearly argues, “the talent differences are observed when the skilled agent performs in turning out the creative product, when the finished product goes on display, or both. One artist’s skill may be apparent to peer trained to supply the same creative input, to persons specialized in the coordination of this and other creative inputs, and perhaps to others qualified as teachers, critics, and the like. Artists may raise their skills by training and/or practice, but nonetheless trained and mature creative agents settle on different plateau of proficiency. That artists (however proficient) can have good days and bad days does not undercut this ranking process, although it does wrap some uncertainty around it. For example, Hollywood’s screenwriters, directors, and producers will largely agree at any one time on who are the “A list” and the “B list” screenwriters”.

The video producers, posting their videos on the website, don’t aim primarily to an economic return. They rather want to gain reputation among the community of

reference - composed mainly by referred user and experts - and being recognized as innovative, different, and skilful. So, it is in prestige, recognition and reputation that video producers, at this level, have their return.

So, in light of what exposed here, a good indicator for a video performance is the peer critical evaluation, turning around the common idea that critical evaluation is a potential outcome rather than indicators of performance.

5. Hypotheses

After having outlined the meaning of creativity, the features of the audiovisual industry, and, having drawn some considerations about the meaning of performance in this setting, in this paragraph I will formulate the research hypotheses. They want to explore the influence of the two key concepts – tacit knowledge and social capital – on performance.

5.1 Knowledge and performance

The stock of tacit knowledge cumulated by individuals through experience could be very relevant (Faulkner & Anderson, 1987). In fact, experience enhances individual skills, such as, for example, identifying key information, chunking that information into a relational pattern (Prietula & Simon, 1989; Simon 1991) and developing heuristics and rules of thumb for problem solving (Garud & Nayar, 1994). In projects, in which specialties are diffused among multiple parties, members with greater experience have more knowledge to share (Nass, 1994) and this, in turn, reduces mistakes and variability (March, 1991), and can enhance absorptive capacity (Cohen and Levinthal, 1991). For example, the movie director and screenplay writer Joan Silver notes that: “A less experienced crew requires more rehearsal time, particularly if there is a complicated camera move. The problem is not only the time passing, but also the need for extra crew rehearsals that can tire the actors unnecessarily” (Squire, 1983).

There are various reasons for believing that this is the case of documentaries. Every documentary (or pod), as well as a movie, is an autonomous project rich in symbolic and creative content. The competences and knowledge possessed by the individuals making up the video are fundamental for the economic and qualitative

success of the documentary, but not all members of the team have the same relevance. Video making teams are very small, if we compare them to movie or TV series making teams. It is composed by a narrow number of members. It can vary a little, but the fundamental figures recur and are: the producer (usually one, but they could be more than one), the sound technician and the digital technician.

Contrary to the case of films, in which the director is considered the leader of the artistic group and also the responsible for all of the phases of the project, or the case of TV series, in which the screenplay writer is the most recognizable person of the team, in the video making, the most important role is played by the producer. His or her organisational and creative skills, therefore, represent the most important element for the team. The audience, moreover, does tend to identify a video with its producer, thus it is fully acknowledged his authorship role. His or her task is to recognize a solid idea, write the story, identify and fix structure and character problems, and present the finished product to broadcasters. It is worth pointing out that sometimes a video can be made by more than one producer (usually two or three maximum).

For these reasons, I focus on the producer considered as the most relevant member in the creative team working in a video documentary project. In particular, I want to test the idea that the producer's cumulated experience (or the cumulated experience of the couple or group of producers in case of more than one producer) is the indicator of individual tacit knowledge in a video documentary project and my first determinant of a video documentary's performance.

Therefore:

Hypothesis 1: There is a positive relationship between the individual experience of the producer and the performance of the video documentary itself.

5.2 Social capital and performance

The audiovisual industry is also characterized by a high level of risk, because, like in the film industry, there is no business formula able to guarantee a priori the success of a documentary. But, differently from movies, which can be considered idiosyncratic projects, documentaries, like other audiovisual products for TV like series, are characterized by a certain level of repetitiveness. In fact, when a documentary is successful, it is not rare that producers repeat the same formula, as audience seems to get accustomed and appreciate, for example, the speaker style, or to the kind of topic discussed. In this sense, documentary producers alternate between phases of exploration, in which they test new ideas and formulas, and phases in which they are mainly interested in exploiting all the intrinsic potential successfulness of the formula.

Furthermore, an inclusive view of organizational intelligence recognizes that human minds not only process information, they also generate knowledge (Nonaka & Kenney, 1991). This knowledge generation occurs as the result of multiple interactions and processes between individuals and groups. In this framework, a group's primary function is not merely to process information, but to find a means for interpreting and creating knowledge in order to embody it in products or services they do. We can all think of ways that groups of individuals working together in making a video function together according to collective and tacit knowledge. Especially in this setting, group

experience is fundamental for finalizing a video, because the team members (the producers, the sound and digital technicians) develop with time a common tacit language that allow them to communicate almost without speaking and help them to catch promptly the right shooting and edit the video.

Therefore, accordingly to the main findings of previous literature, I expect that close and long-lasting relationships among members of video documentary making team can lead to the creation of routine, common languages and accumulation of group tacit knowledge that underlies the group collective mind and improve the team performance (Weick & Roberts, 1993; Berman et al., 2002).

Therefore:

Hypothesis 2a: Strong ties between the video documentary making team members positively affect the audience performance of a video documentary.

Nevertheless, the value of group tacit knowledge may decrease over time (Berma et al., 2002). The relational longevity and the simultaneous creation of routine may be detrimental, limiting not only the group's creativity and ability to break with the past, but also its ability to replicate previous successful models. The accumulation of a stock of group tacit knowledge through repeated interactions among group members (strong ties) can lead to a sustained competitive advantage, but not in an indefinitely way. After some point in time, the positive effect of strong and long lasting ties within the team members on documentary performance should decrease, as a consequence of a sort of knowledge ossification.

Therefore:

Hypothesis 2b: The relationship between strong ties within the video documentary making team and the audience performance of a video documentary is subject to diminishing returns.

6. Methods

6.1 Sample

In order to test the previous hypotheses, I analysed all the videos posted on Current TV website (www.current.tv) from the opening, on February 4th 2005, until December 31st 2006. I didn't take into account the whole set of videos broadcasted by Current TV, but only those videos uploaded on the website. That means that in my sample there are videos shown on the website, but never broadcasted on Current TV (because they never got enough greenlights for television). And, similarly, I also excluded all videos selected and provided by Google Current and Yahoo! Current Network and broadcasted on Current TV.

The unit of analysis is the single "pod". For each unit, I collected the following information:

1. Retrieval information: Title, Duration, Description, Shoot Date, Producer(s), Sound technician(s), Digital technician(s), Video tags;
2. Genre: Action&Adventure, Arts&Entertainment, Environment, Human Interest, News, Politics&Opinion, Sex&Relationships, Spirituality&Relationships, Style&Culture, Technology, Work&Money;
3. Category: Pod, V-CAM, Current TV Promo, Contest&Promotion, Mobile Footage;
4. Scoring: Viewer feedbacks, Video score, Number of views, Number of Greenlights, Current rank, Highest rank.

The complete sample of all videos uploaded on current.tv web site between February 4th 2005 and December 31st 2006 consists of 2946 videos. The sample was then reduced using the following criteria:

- I excluded videos for which all of the information concerning the professional categories making up the team (producer(s), sound technician(s) and digital technician(s)) were not available;
- I excluded videos still eligible for greenlights. Each video can be voted by community members with a greenlight for three months since their upload on the website. After this period it is archived (but still viewable on the website) and it cannot be voted any more. This exclusion is based on the need to consider only those videos whose performance measure is set. In fact, during the three months before the video is archived, the performance score fluctuates instantly as it gets more (or less) popular among the audience.
- I excluded videos whose producer uploaded only one video. This criterion of selection is based on the need to consider only documentaries made by producers for whom it is possible to analyse their past experience, and consequently their acquired experience and social capital.

The sample was subsequently broken down into two sub-samples: the videos uploaded between February 4th 2005 and May 31st 2006, and those made between May 31st 2006 and December 31st 2006. The videos uploaded in the period 31/5/2006 – 31/12/2006 formed the sample used to measure the dependent variables (performance). However, this sample underwent a further process of selection, which excluded those documentaries with producers who had not made another documentary in the previous

sixteen months. After this selection, the final sub-sample thus consisted of 550 videos whose dependent variable of performance was measured.

The individual experience and the relational intensity of the producers working in the 550 teams were reconstructed using the data from the second sub-sample: i.e. the remaining 1017 videos produced and uploaded in the sixteen months before. This sample was the source used to measure the independent variables (individual experience and relational intensity within the video documentary making team) of our model. It should be finally noted that, if a producer worked in more than one video in the period 31/5/2006 – 31/12/2006, the data concerning the first video were used to reconstruct the experiential and relational past of the subsequent video.

6.2 Measures

6.2.1 Dependent variable

The dependent variable is the audience rating of each documentary and it is measured within the sample of 550 videos broadcasted between May 31st 2006 and December 31st 2006, through the combination of some score indexes.

In our research setting, the product is thought for a typology of consumer, current.tv users, that doesn't directly pay for the enjoyment, and express his or her satisfaction through the choice of watching the video and through the willingness to share this video with other people on the TV channel. There are several score assignments for each video: the number of Greenlights, the video score, the number of views and the rank.

Greenlighting is how the viewer tells the network what to put on TV. The viewer has to be a member of Current.tv to greenlight and he can only greenlight a pod once

(they can also retract their greenlight before a pod gets picked for air). Greenlighting is not a comparative judgment, e.g. “This is better than that.” Rather, for each pod the viewer watches, he should simply asks himself if the video is good enough for TV. And if he thinks it is worth watching the video on TV, he or she gives the greenlight.

The *Video Score* is a reflection of the video’s popularity in the community of reference. It goes up when a registered user gives the video a greenlight; it can also go down as greenlights get older. The Video Score is calculated based on three things: the number of greenlights an upload has been given, when they were given, and by whom. In order to keep the “Top Ten” list moving, they slowly reduce the value of greenlights as they age. So, for example, a pod which has earned 10 greenlights in one day will rank higher than a pod that has earned 10 greenlights over the course of 3 months. They also weigh each person’s greenlights differently based on how active they are in the community and whether or not they have greenlit successful videos before they get popular. If the video is archived (after three months from the upload), they indicate the *maximum video score* value reached by the video.

The *number of views* indicates the number of members of the community that watched the video. Each viewer can just take a look to the documentary or also post a short comment that can be read by everyone. There is a sort of control of comments on the website, because every community member can rate any community member’s comment as “helpful” or not. In this way, the network uses this information to reward its most helpful community members.

The *current rank* is the daily actual position occupied by the video. It is updated instantly. For archived videos, it is shown its *highest rank*, which is the highest position ever reached by the video since it was posted on the website.

I built the measure of performance taking into account the number of *greenlights*, the number of views, the maximum video score, and the highest rank. Each indicator has been weighed and concurs to define the *rating* (r) of each video:

$$r_x = G_x + v_x + \max VS_x + \frac{100}{\text{highest}R_x} \quad \text{with: } x = 1, \dots, 550$$

Where:

- G_x is the number of *greenlights* collected by video x (where each *greenlight* weights 10), with $0 \leq G \leq 188$;
- v_x is the number of times viewers watched entirely video x , with $14 \leq v \leq 3583$;
- $\max VS_x$ is the maximum video score reached by video x while eligible for vote, with $0 \leq \max VS \leq 879,3$;
- $\text{highest}R_x$ is the highest position reached by video x in the pods ranking list, with $1 \leq \text{highest}R \leq 1625$, and $\frac{100}{\text{highest}R_x} = 0$ when the video is “not ranked”.

Since the distribution of performance data is skewed, in order to achieve a better approximation to a normal distribution, I used a square root transformation of performance data.

6.2.2 Independent variables

The independent variables are the individual experience of the producer and the relational intensity within the video making team.

Producer's individual experience

A central issue for my study is the determination of an appropriate measure of individual experience that, I have argued, is a proxy for the value of the stock of tacit knowledge held in the individual mind of each team member. In fact, with continuity in the market, a video documentary maker acquires a cumulative line of credits. Each documentary provides strings of opportunities for learning and, at the same time, for demonstrating talents and capabilities. Since web performances are easily observable, video documentary makers accumulate a history of results. These results are partly economic, partly artistic and partly imputed to the contribution of an individual in the community. Past experiences slowly make a person a personage, a valuable commodity for buyers, giving him economic returns and the opportunity to work.

I measured individual experience by calculating for each producer of the 550 videos in the sample the number of documentaries (in our population of 1567 documentaries) in which he or she has worked before making the analysed documentary. For those videos in which more than one producer worked, I considered in my measure only the individual experience of the first producer. I assume that the first name that appears in the video making team belongs to the person who, more than others, brings his or her personal experiential contribution to the team.

Relational intensity within the team

Another central issue for this study is the determination of an appropriate measure of relational intensity that, as I have argued, is a proxy for the value of the stock of tacit knowledge held by the team.

In fact, the relational intensity is a measure of social capital, understood as “closure” and not like “brokerage” (Burt, 1992). In other words, I did not consider the ties that the project team members have with the outside world but the strength of their ties with each other, in order to express the stock of collective tacit knowledge.

In order to measure the relational intensity, I followed two steps. First, for each video making team, I computed the dyadic relational intensity between pairs of documentary making team members. In this computation, I considered all the $n(n-1)/2$ dyadic relations between the “actors” (where n is the number of documentary making team members working together in a video). In order to do so, I divided the number of collaborations in the previous documentaries between the two “actors” of the pair in the period February 4th 2005 - May 31st 2006, by the number of days since the first and the last time they worked together (if in the past they have worked together only once, the numerator is 1). This indicator has been previously used in the literature (Jones et al., 1997) and expresses intensity in the form of the frequency of relations per unit of time: for example, the intensity is stronger in the case that a producer has made three documentaries with the same sound technician in a period of three months than seven months.

The second step was to sum up, for each team, the previous dyadic ratings and dividing this sum by the number of dyads composing the team considered. Even this measure has been used in previous research.

For the purposes of simplicity, I gave the same importance to all team members even though sometimes the degree of decision-making is centralized in just one producer (there are situations in which he or she centralises the majority of decisions and coordinates the work of the other members – even other producers).

Relational intensity squared

This is the squared value of relational intensity within the video documentary making team. This variable allows me to test a curvilinear relationship between the relational intensity and performance, which is the functional form I have hypothesized.

6.2.3 Control Variables

Keeping in mind the indications of the experts and previous publications concerning the web and the television industry (Bielby & Bielby, 1994; Horen, 1980; Stearns, Hoffman & Heide, 1987), and more generally cultural performances (Jones et al., 1997; Hadida, 1999), I have incorporated in the models the following control variables that measure some factors which could affect the potential success of a video documentary.

Category

Categories are essentially video typologies, characterized by a narrative formula, by a standard of quality and by a specific purpose. From the viewpoint of product structures and quality, the formats listed above can be grouped into five categories: Pods, V-CAMs, Current TV Promos, Contests & Promotions, and Mobile Footages.

- Pods are short videos that tell a story, profile a character and/or share an idea. Current TV pods are non fiction video that is anywhere from one minute to seven or eight minutes; it's a self-contained story, a minidocumentary, a profile of an interesting character or a dose of information. Pods can be on all subjects, in all styles - everything from first-person narratives to animated political satire, some

produced in-house or by outsiders. Pods can stand alone to tell a story, profile a person or inform the audience in some way.

- Promos are essentially videos that promote the network. They tell the audience who the network is, why it is different, and why the viewers should participate actively in the network.
- V-CAMs are viewer-created advertising messages for real sponsors, that can run on Current TV.
- Mobile Footages are short videos recorded with a mobile phone and capture striking, hysterical or newsworthy moments.
- Raw Intel is raw footage caught with a video camera. This is reserved for footage that is news-worthy and/or is so riveting on its own. It is broadcasted without all the extra editing and post production needed to create a finished pod.

I decided to create a dummy variable concerning each typology of category because viewers have different behaviours according to the quality (sound and images) and the purpose of the video. In fact, the better the quality of the video, the higher the pleasure for the viewer to barely watch the video and the lower the effort the viewers have to make in order to understand the meaning. In this sense, I expect that the higher the quality, the higher the number of views and greenlights.

I introduced five dummy variables, one for each category:

- 1) POD: this variable is equal to 1 if the video is a Pod; it is equal to 0 if the video is other than a Pod.
- 2) PROMO: this variable is equal to 1 if the video is a Promo; it is equal to 0 if the video is other than a Promo.

- 3) VCAM: this variable is equal to 1 if the video is a V-Cam; it is equal to 0 if the video is other than a V-Cam.
- 4) MOBILE: this variable is equal to 1 if the video is a Mobile Footage; it is equal to 0 if the video is other than a Mobile Footage.
- 5) RAW_INTEL: this variable is equal to 1 if the video is a Raw Intel; it is equal to 0 if the video is other than a Raw Intel.

In order to understand if there is any effect caused not by the specific category, but rather by the overall product quality, I grouped the formats listed above into two broad categories, representing the two levels of quality: Pods, Promos, and V-CAMs, on the one side, and Mobile Footages and Raw Intel on the other. I introduced the following control variable:

- 6) CATEGORY: this variable is equal to 0 if the video is a Mobile Footage or a Raw Intel; it is equal to 1 if the video is a Pod, a Promo, or a V-CAM.

Genre

The genre is the typology of content of each video. As I described before, there are 11 genres into which each author can classify his video:

- Action & Adventure: stories whose central struggle plays out mainly through a clash of physical forces and action, generally involving danger, risk, and chance, often with a high degree of fantasy.
- Sex & Relationships: stories that try to show real relationships involving people in couples, friends, families, or between a person and his pet. All kinds of

relationships that reveal and describe good feelings and the illusions and delusions of love.

- Spirituality & Relationships: it is a pod telling how a person is connected to the divine, about everything embodies and represents the spirituality of a person - from Jesus to Allah, from yoga to tantra.
- Style & Culture: these are pods telling stories about how life goes on and how people behave in all countries around the world. It is a way to teach something new about different and distant cultures.
- Arts & Entertainment: stories whose objective is describing the inside life of film festivals, art expositions, performing arts; they usually go beyond the “official story” and tell the real story about people who make films.
- Environment: it is an earth-focused pod telling the story of someone working to save the environment or about a solution to propose or an alarm to sound about risks the planet is running.
- Human Interest: they provide information and social commentary about simple and intimate portrait of human beings. The purpose is giving out and opening the eyes of public about topics that rarely gets on the air.
- News: stories about issues like global warming, terrorism, AIDS, poverty and so on. Everything concerning what is going on these days in the world.
- Politics & Opinion: stories whose subject could be either telling people’s opinions about current issues or telling people what politicians say and do about political problems. The aim is sparking some debate and awake the younger generation from their passivity and conformism.

- **Technology:** documentaries about new technological trends that try to understand the way the future goes. “Technology” is understood as the relationship between society and its tools, and as practice, the way we do things around here. Video makers take machines and devices into account, as well as social structures, command, control, and infrastructures.
- **Work & Money:** videos whose purpose is documenting life of particular classes of workers, and sharing information about social issue related to employees conditions, such as coalitions of civil and human rights advocates for workers across the countries or inequality to economic, social conditions and bureaucratic barriers for immigrants.

I decided to introduce a dummy variable concerning each genre because I expect the viewers to have an attitude that changes according to the content of videos. In other words, a viewer usually chooses to watch the same genre according to his or her personal interests. It is very rare that a viewer watches with the same frequency all kinds of videos. In this way, there are some clusters of users fond of a particular genre. Of course, it is more likely that videos whose content is about amusing and funny issues get a higher number of views and greenlights compared to more serious topics.

For these reasons, I introduced eleven dummy variables to test the effect of genre on the video’s success among audience, one for each genre:

7) **ACTION:** this variable is equal to 1 if the video deals with Action & Adventure issues; it is equal to 0 if the video deals with other than Action & Adventure issues.

- 8) SEX: this variable is equal to 1 if the video deals with Sex & Relationships issues; it is equal to 0 if the video deals with other than Sex & Relationships issues.
- 9) SPIRITUALITY: this variable is equal to 1 if the video deals with Spirituality & Relationships issues; it is equal to 0 if the video deals with other than Spirituality & Relationships issues.
- 10) STYLE: this variable is equal to 1 if the video deals with Style & Culture issues; it is equal to 0 if the video deals with other than Style & Culture issues.
- 11) ART: this variable is equal to 1 if the video deals with Arts & Entertainment issues; it is equal to 0 if the video deals with other than Arts & Entertainment issues.
- 12) ENVIRONMENT: this variable is equal to 1 if the video deals with Environment issues; it is equal to 0 if the video deals with other than Environment issues.
- 13) HUMAN: this variable is equal to 1 if the video deals with Human Interest issues; it is equal to 0 if the video deals with other than Human Interest issues.
- 14) NEWS: this variable is equal to 1 if the video deals with news; it is equal to 0 if the video deals with other than news.
- 15) POLITIC: this variable is equal to 1 if the video deals with Politics & Opinions; it is equal to 0 if the video deals with other than Politics & Opinions.
- 16) TECHNOLOGY: this variable is equal to 1 if the video deals with Technology issues; it is equal to 0 if the video deals with other than Technology issues.
- 17) MONEY: this variable is equal to 1 if the video deals with Work & Money issues; it is equal to 0 if the video deals with other than Work & Money issues.

In order to test the overall effect of the video content - and not the effect of the single genre - on the video's success among audience, I grouped the genres in

accordance to the level of amusement of the content: videos referred to Environment, Human Interest, News, Politics & Opinion, Technology, and Work & Money content, on the one side, and videos referred to Action & Adventure, Sex & Relationships, Spirituality & Relationships, Style & Culture, and Arts & Entertainment content on the other. I introduced the following control variable:

18) GENRE: this variable is equal to 0 if the video refers to Environment, Human Interest, News, Politics & Opinion, Technology, and Work & Money content; it is equal to 1 if the video refers to Action & Adventure, Sex & Relationships, Spirituality & Relationships, Style & Culture, and Arts & Entertainment content.

Duration

Every video documentary, for any category, can have a duration that goes from one minute to eight minutes. Theoretically, even the length in time can have an impact on their audience performance. In fact, the longer the video, the higher the effort the viewers have to make in order to watch the all video until the end and give a feedback. I expect that the longer the video, the lower the number of views and greenlights given to the video itself.

In order to test the effect of duration on the video's success among audience, I introduced a dummy variable:

19) DURATION: this variable is equal to 0 if the video is anywhere from is one to four minutes, and it is equal to 1 if the video is anywhere from five minute to eight minutes.

Number of producers

Since some videos comprise more than one producer, I test the effect of multiple producers on video's success among the audience. For this purpose, I introduced a dummy variable:

20) PRODUCERS: this variable assumes the value 0 if only one producer works in the video, and it is equal to 1 if two or more producers works in the documentary.

7. Analysis and results

Table 1 reports descriptive statistics and correlations between all variables included in the analysis. The bivariate relationships reveal that all independent variables are significantly related to performance ($p < .01$).

Table 2 summarises the results of the test concerning the effects that individual tacit knowledge (individual experience) and group tacit knowledge (relational intensity) that the video making team members have on video performance. In this series of regression models, I first tested these effects separately and then jointly.

Model 1 shows the results of the basic regression model, which only includes the control variables (Pods, V-CAMs, Promos, Contests, Mobile, Category, Environment, Human, News, Politics, Technology, and Money, Action, Sex, Spirituality, Style, and Arts, Genre, Duration, and Number of producers) that have previously been shown to be significant in predicting the audience performance of a video documentary.

Model 2 tests the regression of the performance in relation to the individual experience of the producer. Model 3 tests the effect relational intensity within video making team members on performance, and Model 4 provides a test for all the variables jointed, showing the combined effects of individual experience and relational intensity variables.

All four models² presented in Table 2 are significant overall as indicated by the F-tests ($p < 0.001$ for all models). Furthermore, each model shows an increase in the R^2

² For the purpose of completeness, in order to better understand the relation and improve the correlation between variables, I tried to transform my distribution with a logarithmic transformation. The resulting regression models were significant in the F-test, but showed R^2 values lower than the R^2 values obtained with the non logarithmic regression (in model 1, $R^2 = .14$; in model 2, $R^2 = .10$; in model 3, $R^2 = .15$; in model 4, $R^2 = .16$). I here decided not to display the logarithmic regression result, as it doesn't add much knowledge to the information provided by the regression model displayed in Table 2. For a further investigation of these results, see chapter 8.

value over the previous model (in model 1, $R^2 = .31$; in model 2, $R^2 = .34$; in model 3, $R^2 = .35$; in model 4, $R^2 = .37$). As regards the control variables, only “Duration” and “Style” are positive and significant in each model tested ($p < 0.001$ for the DURATION variable, $p < .05$ for the STYLE variable).

Hypothesis 1, which predicts a positive relationship between the individual experience of the producer and the performance of the video documentary itself, received support. In fact, individual experience has a positive and significant relationship with share performance in all models considered (in model 2, $p = .04$; in model 4, $p = .065$).

Coefficients reported in model 4 confirm that hypothesis 2a and 2b are both supported. Strong ties within the video documentary making team positively affect the audience performance of a video documentary project but with diminishing returns. In fact, the coefficient of the relational intensity squared variable in model 4 is negative ($-.41$) and highly significant ($p = .022$).

TABLE 1 - Means, Standard Deviations, and Correlations among Variables

Variable	Mean	Standard Deviation	Variable	Mean	Standard Deviation
1. Rating	463.4	366.30	13. ENVIRONMENT	.04	.19
2. POD	.67	.47	14. HUMAN	.06	.23
3. PROMO	.11	.31	15. NEWS	.07	.25
4. VCAM	.18	.38	16. POLITIC	.06	.24
5. MOBILE	.03	.17	17. TECHNOLOGY	.01	.10
6. RAW_INTEL	.01	.09	18. MONEY	.06	.22
7. CATEGORY	.96	.19	19. GENRE	.70	.45
8. ACTION	.13	.33	20. DURATION	.74	.44
9. SEX	.02	.15	21. PRODUCERS	.19	.39
10. SPIRITUALITY	.03	.17	22. Individual experience	3.85	2.41
11. STYLE	.32	.46	23. Relational intensity	.65	.55
12. ART	.20	.40	24. Relational intensity squared	.72	.95

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
2.	.15																						
3.	.04	-.50***																					
4.	-.11	-.67***	-.16**																				
5.	-.08	-.25***	-.06	-.08																			
6.	.03	-.14**	-.03	-.04	-.02																		
7.	.57	.28**	.07	.09	-.87**	-.48***																	
8.	-.13	-.01	-.00	-.00	.03	.02	-.03																
9.	.04	.03	.02	-.07	.04	-.02	-.03	-.06															
10.	.01	-.02	.00	.05	-.03	-.02	.03	-.07	-.03														
11.	.00	.01	.01	-.00	-.05	.02	.03	-.27***	-.11*	-.13*													
12.	.04	.00	-.00	.00	-.01	.00	.00	-.20***	-.08	-.09*	-.34***												
13.	.02	.01	-.01	-.05	.13**	-.02	-.10*	-.08	-.03	-.04	-.14**	-.10*											
14.	-.05	-.00	.06	-.04	.00	-.02	.01	-.01*	-.04	-.05	-.17***	-.13**	-.05										
15.	.06	.02	-.03	.01	-.05	.05	.02	-.11*	-.04	-.05	-.18***	-.13**	-.06	-.07									
16.	.07	-.02	.03	-.01	.04	-.03	-.03	-.10*	-.04	-.05	-.18***	-.13**	-.05	-.07	-.07								
17.	-.02	-.07	.02	.09*	-.02	-.01	.02	-.04	-.02	-.02	-.07	-.05	-.02	-.03	-.03	-.03							
18.	-.01	.03	-.08*	.05	-.04	-.02	.05	-.09*	-.04	-.04	-.16***	-.12**	-.05	-.06	-.07	-.06	-.03						
19.	-.04	.00	.01	-.01	-.03	.02	.02	.25**	.10*	.12*	.44**	.32**	-.31*	-.39**	-.41**	-.40*	-.16**	-.37**					
20	-.37**	.23***	-.12**	-.11*	-.14**	-.07	.16**	.03	-.07	-.05	.12**	.08	.02	-.04	-.10*	-.11**	-.10*	-.04	.17**				
21.	.07	-.05	.05	.04	-.05	.00	.05	-.07	.02	-.04	-.04	.01	.07	.05	.04	.01	-.01	.01	-.08	-.10**			
22.	.34**	.15	.23	.11	-.06	-.01*	.08	.06	.16	.31	.09	-.00	-.03	.23	-.04	-.10	.02	.01	.02	.47**	-.02		
23	.38**	.01	.06	.07	-.12	-.03	.07	.01	.00	.10	.11	.08	.01	.12	.00	.03	.01	.01	.01	.23**	-.06	.51**	
24	.31**	.01	.05	.05	.09	-.01	.04	-.02	.02	.06	.07	-.05	.00	.06	.01	.02	.02	.00	.00	.19**	-.03	.47**	.95**

⊥ = p < .10; * = p < .05; ** = p < .01; *** = p < .001

Two-tailed tests.

TABLE 2 - Results of Regression^a Analysis for Performance

Variables	Model 1	Model 2	Model 3	Model 4
Control variables				
POD	.13	.16	.13	.17
PROMO	.18	.19	.18	.20
V-CAM	-.07	-.07	-.06	-.06
MOBILE	-.05	-.06	-.07	-.05
RAW INTEL	.15	.19	.18	.18
CATEGORY	.08	.08	.07	.10
ACTION	-.09	-.07	-.07	-.08
SEX	.03	.05	.05	.05
SPIRITUALITY	.09	.10	.08	.10
STYLE	1.33 *	.13	.65 *	1.06 *
ART	.11	.09	.09	.08
ENVIRONMENT	.07	.06	.06	.06
HUMAN	-.05	-.16	-.15	-.16
NEWS	.26	.15	.19	.15
POLITIC	.17	.21	.21	.19
TECHNOLOGY	-.11	-.19	-.15	-.16
MONEY	-.56	-.23	-.48	-.71
GENRE	.35	.21	.29	.29
DURATION	-.93 ***	.68 ***	.75 ***	.88 ***
PRODUCERS	.14	.28	.23	.31
Individual experience		.58 *		.58 ⊥
Relational intensity			2.19 **	.78 **
Relational intensity squared			-.38 **	-.41 **
R ²	.31	.34	.35	.37
Adjusted R ²	.28	.31	.33	.35
Observations (n)	550	550	550	550

^aRegression ratios are not standardised

⊥ = p < .10; * = p < .05; ** = p < .01; *** = p < .001

8. Discussion and conclusions

The analysis confirms many of the expectations expressed in the research propositions. Before discussing the central variables of the present analysis, it is worth making a brief comment on the control variables. Considered independently, the control variables explain more than 30 percent of the variance in the performance of a documentary ($R^2 = .31$). In terms of audience performance, the duration of a video documentary is the only valid control variable, thus apparently confirming the existence of a “duration effect”. The effect of the genre is not generally significant, and the category does not seem to be a good predictor of audience performance as well. This result is not completely unexpected because the length of a video has a strong influence on the willingness of a user to watch a video or not. As time is a scarce resource, especially for web surfers, short videos have a higher likelihood to be watched by web audience. And the number of views is one of the determinants of my performance index. Therefore, the audience rating takes into account the duration of a video. I decided, anyway, to consider in my analysis the effect of the other control variables because all previous studies on performance of audiovisual products have confirmed their relevance (Brouwer & Wright, 1990; Jones et al., 1997; Stearns, Hoffman & Heide, 1987).

Concerning the expectations and propositions, I found that there is a positive relationship between the individual experience of the producer or the producers and the audience performance of the video documentary itself. This finding confirms the relevance of individual tacit knowledge that each individual carries to the team. This result confirms the idea that, as audiovisual industry is characterised by a project-based organisational structure, each project could be seen as an uncertain and complex activity, which requires a large repertoire of skills and a great degree of discretion at the

operational level. Moreover, in video making teams specialties are dispersed among different individuals and, thus, members with greater experience have more knowledge to share and this, in turn, can reduce mistakes and enhance team performance. In such a context, therefore, the stock of tacit knowledge cumulated by individuals through experience seems to be relevant, as showed in the model (see models 2 and 4). In fact, experience enhances individual skills, such as, for example, identifying key information, developing heuristics and rules of thumb for problem solving and so on.

Anyway, the most important finding from this study is the support for a non-monotonic relationship between levels of relational intensity and group performance (see model 3 and 4). According to this result, I can argue that the maintenance of stable and intense relationships – strong ties – inside the project team seems to have a positive effect on the performance of a video documentary, but with diminishing returns. This result confirms the interpretation that, at the beginning, strong ties associated with group *network closure* (Coleman, 1990) could support the creation of a shared culture, reciprocal trust and routines and, thus, affect positively team performance.

This result is consistent with the contextual characteristics of the audiovisual industry. As I said earlier, video documentaries – especially low-budget documentaries as those uploaded on current.tv - are characterized by a certain level of repetitiveness: when a documentary is successful, producers are likely to repeat its formula. In this way, video producers alternate between phases of exploration in which they test new ideas and formulas and phases in which they are mainly interested in exploit all the recognizability and intrinsic potential successfulness of a consolidated formula. Consistently, close and long-lasting relationships among members of a team can lead to an accumulation of stock of group tacit knowledge which supports the building of

shared routines. In this way, the emergence of consolidated patterns of interaction among team members facilitates team members working together and leads to rapid improvements in productivity and synchronicity. As Demsetz (1988) and Kogut et al. (1996) argues, teams are likely advantaged for more novel (e.g., more complex or more leading-edge) technological development in comparison to market modes of organization because they better facilitate the generation of new knowledge and aid in its efficient dissemination through the formation of firm specific languages and communication codes.

Nevertheless, the diminishing returns emerged from the analysis confirms the idea that the value of group tacit knowledge may decrease over time. In fact, the presence within a team of strong ties associated with group network closure can limit the group's creativity and ability to explore new ideas. After some point in time, the effect of strong ties within a team on fiction performance should decrease as knowledge ossifies. Once collective schemata have coalesced around a set of interdependent individual schemata, it may be progressively more difficult to alter them. Individuals within the group may be unwilling or unable to adopt new modes of behaviour, particularly if they involve the unlearning of existing tacit routines. In this way, a process of knowledge ossification occurs as thought process and schemata become routinized around a taken-for-granted way of interacting. Over time, this routinization might limit variation and have negative consequences. In fact, there is a clearly limit to the knowledge that can be accumulated about an activity or process. Initially, repeated interactions among team members could lead to rapid improvements in team productivity and effectiveness, as each team member learns how to coordinate his or her behaviours with the other members' ones. However, after a time, much of what there is to learn has been learned, and learning-

based improvements in productivity and effectiveness begin to decline, reflecting diminishing returns.

This finding has important implication from the theoretical point of view, because it suggests two things: first, accordingly to resource-based view, the stock of group tacit knowledge can be a valuable intangible resource which can lead to a sustained competitive advantage. But, as the empirical evidence suggests, group tacit knowledge affects positively team performance with diminishing rates. This result, thus, confirms the idea argued by several researchers (e.g. Miller, 1990; Levinthal & March, 1993; Argyris, 1999), that core skills of an organization can also lead to cognitive rigidity and an inability to adapt with sufficient alacrity to a changing environment. Skills and resources that make organizations successful, might also lead to rigidity and decline. This is one of the central paradoxes of organizations and learning processes: individuals, teams and firms can become trapped within their own competencies, as their core competencies can become core rigidities.

The second relevant insights emerged from research is that the diminishing returns of group tacit knowledge could occur not only, as argued in many studies (e.g. Hansen, 1999; Katz, 1982), when team are performing more innovative and creative tasks, but also in a context, like audiovisual industry, in which the repetition of consolidated formulas seems to be the best practice. In fact, media products are characterized by a high level of seriality as producers aim to replicate previous successful models in a prevailing logic of *exploitation* (March, 1991). Nevertheless, the results suggest that, after some point, as relational intensity among members of a video making team grows, the team performance will decline. This result confirms the idea of March (1991) that teams that engage in exploitation to the exclusion of exploration are

likely to find themselves trapped in suboptimal stable equilibria. Therefore, team have to try to maintain an appropriate balance between the needs for exploration (searching new ideas, varying consolidated schemata and experimenting new frontiers) and for exploitation (looking for efficiency and repetition of consolidated formulas and styles).

Knowledge can be considered a double-edged sword: while the benefits are often immediate and easily recognizable, the costs related to rigidity, failure of appropriation, and change are more subtle, less transparent, and intimately tied to social processes. This, however, should embolden rather than discourage scholars in the field.

As a conclusion, this study supports the hypotheses that, on one side, there is a positive correlation between team members' individual tacit knowledge and team performance and, on the other, there is an inverted U-shaped relationship between the stock of tacit knowledge accumulated through team stability and the performance of a group.

A possible explanation of this unexpected result, is the hypothetical presence of a missing explanatory variable. In my opinion, the model should be integrated with a third independent variable that measures the individual and the collective creativity. Performance, in fact, might increase as creativity increases, up to a certain point; after which it diminishes as mutual relations inhibit the capacity of producing novelty.

No valid tests, though, have been made on this topic yet, especially in the audiovisual industry, and it is quite difficult, if not impossible to measure it with the data I collected for this study. Moreover, my assumption is that there could be an interplay effect between creativity and the individual and collective experience. In the analysis conducted here, as I didn't encounter this variable, I assumed it as a constant.

The reason why I obtained an unexpected result might be found in the presence of this *ghost* variable that probably has an impact on the other variables.

But this statement implies a general consideration about the complexity of a model. In fact, in modeling a complex phenomenon, we could add many variables into our model and it would thus acquire an almost exhaustive representation of the system. However, the computational cost of adding such a huge amount of details would effectively inhibit the usage of such a model. Additionally, the uncertainty would increase due to an overly complex system, because each separate part induces some amount of variance into the model. It is therefore more useful for the purpose of simplicity, to make some approximations to reduce the model to a sensible size.

9. Limitations and further research

A number of other areas for future research seem evident. First of all, as in this study I considered team members' social capital as *network closure* (Coleman, 1990), for future research, it would be interesting to consider also the effects of *weak ties* (Granovetter, 1973) on the team performance. In fact, by adopting an idea of social capital closer to Burt's idea (1992) of *brokerage*, we could consider the ties that the project team members have with other people working outside and belonging to a broader professional network.

A second area for possible improvement could be the analysis of the role of each team member's *reputation* in the project success. To what extent does the reputation of each team member affect the team performance?

A third improvement of the present work could be the inclusion of the *budget* among the independent variables. In fact, the amount of money at the producer's disposal for making a documentary could have a strong impact on the quality and maybe on the audience success. Unfortunately, this information is not available for the kind of videos taken as a sample for this research.

Finally, another limitation of the present study which can lead to future research is that I considered only one measure of team performance: the audience rating. In this process of evaluation, the concept "distorted tastes" is certainly problematic. How can one decide whether a taste is not normal and, so, not right for evaluating a product? For future research it would be useful to have other measures of performance, such as, for example, the audience share during the broadcasting on Current TV. The 'audience share' is the estimated number of people tuned to a program or to a channel, during an average minute, expressed as a percentage of all people tuned on whatever program in

the same minute. An increase of percentage in a network's overall audience sharing means additional advertising revenues. The audience share would be an interesting index of video performance because it is closer to the TV audience behaviour, which is different from the web audience. Some studies (Wulfsberg, 1986; Barwise and Ehrenberg, 1982) have reported no correlation between the rating of different TV programs and their audience size. It may happen that programs that have only small audience might be particularly loved by their few viewers. Or that people who watch a documentary one week do not watch it the next. These behaviours may affect the success of a TV program. Another possible implementation of performance index could be the one that takes into account the amount of money advertisers are willing to pay in order to have a space during the broadcasting of each documentary.

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