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INTER-ORGANIZATIONAL NETWORKS IN THE CULTURAL AND CREATIVE INDUSTRIES: A SOCIAL NETWORK ANALYSIS OF THE FOUNDATION GIORGIO E ISA DE CHIRICO.

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“Not everything that counts can be measured, and not everything that can be measured counts”

Albert Einstein

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ABSTRACT

In the last decade, it has been widely recognized how firm's critical resources may extend well beyond firm boundaries. Indeed, it emerged that the advantages or disadvantages of firms are mostly related to the advantages or disadvantage of the network of relationships in which they are embedded. Especially in the creative industries, collaboration patterns are extremely important, due to the high level of interaction existing between multiple autonomous agents. As a result, the understanding of the network structure is becoming a crucial element for the identification and exploitation of information and knowledge, and thus social capital. This paper examines the type of network structure which characterizes the art industry in Rome, through the study of the Foundation Giorgio e Isa de Chirico. First, a review of previous research has been conducted, which ranges from the description of the features of the creative industries to the analysis of the fundamental elements which constitute inter-organizational networks. Subsequently, qualitative tools such as participant observation and telephone interviews have been used, in order to explore the structural characteristics that compose the network under investigation, and whether there is presence of structural holes. Finally, results have been discussed.

Keywords: Network analysis; Social capital; Inter-organizational networks; Structural holes; Brokerage.

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1. INTRODUCTION

From the 18th century, the economic development has gone through different stages, moving from an agricultural and industrial economy, built on people's left brains, to an economy where information and knowledge are defined as the most important assets. This change, that shifts from a *production based* economy to a *service based* one, is expected to be as challenging and as big as the shift that leads from agrarian to industrial societies in 1700 (Martin Prosperity Institute, 2009).

Nowadays, indeed, the conceptual and informational economy is seen as crucial to foster growth; and creativity and intuition has become the new mantra. It has changed the way in which people live, think and work. As a result, creativity is taking a pivotal role in nourishing the economy and its growth, and it cannot be ignored any longer. In light of this, the term *creative economy* has emerged as a means of describing how creativity and economic development are inextricably intertwined when it comes to generate growth. Due to the fuzziness and complexity of the concept, over the past decades, multiple definitions have been developed, in order to gain a deeper understanding of its functionalities and potentialities[1].

What emerged from the literature is that creative industries, and consequently the creative economy, are made up of different dimensions that are becoming more and more relevant when it comes to develop solid initiatives in policy making. The creative economy is characterized by the presence of formal and informal institutions, which tend to rely on processes and systems that are straightforward, and which make informality a key feature. Indeed, it is widely acknowledged that, due to the high number of enterprises "operating off the books", "the layer of governmental, commercial and civic institutions that is central to cultural life in advanced economies, e.g. public service broadcasters, museums, art schools, film studios, etc., is generally very thin" (UNESCO, 2013: 26). If, on one hand, this creates asymmetries; on the other hand, it fosters knowledge diffusion.

Creative industries are characterized by project-based systems of production, and the creative goods are usually intended as collective goods. As a result, the production and consumption of the creative output requires the integration of complementary resources. The knowledge intensive nature of those industries makes inter-firm collaboration as a crucial element for achieving success, since it can foster the flow of both tangible and intangible resources among the partners involved.

Social relations have been identified as beneficial for individuals and organizations in several ways. They can facilitate coordination and cooperation (Anderson and Jack, 2002), thus resulting in

[1] The term creative economy has first appeard in 2001 in John Howkins' book, *The creative economy: how people make money from ideas*. Howkins (2001: 8) defined the creative economy as "the transactions of creative products that have an economic good or service that results rom creativity and has economic value".

a valuable spread of best practices and innovation in the network (Batt, 2008). The cross-pollination of ideas coming from different domains is one of the major characteristic of the creative industries and it can be nurtured by the relationships built in the network (the ties of the network), which are considered as conductors for social capital. Social relationships are thus a precious resource in the company, and they have an impact on the firm's performance as well. It is, therefore, unrealistic to analyse and study inter-organizational collaborations, and the exchange and sharing of resources, if the social environment in which those exchanges take place is not considered: organizations and individuals, in fact, make decisions without ignoring the social context in which they are embedded.

As a consequence, the network, or social network analysis, emerged as a framework of analysis, and it is based on the idea that relationships among interacting units are essential in generating value for the actors. This theory conceives society as made of an overlapping network of social relationships, between the nodes in the network, which can connect individuals, groups and organizations. According to this view, actors and their actions are "interdependent rather than independent, autonomous players" (Abraham et al., 2010: 27). The unit of analysis, therefore, is no more the individual itself, but rather "an entity consisting of a collection of individuals and the linkages that exist between them" (Wasserman and Faust, 1994).

Networks can be characterized by few or many actors, with one or more relationships among each other. However, in order to analyse the network structure in a meaningful way, and to investigate its role in fostering information flows and thus innovation, researchers found that both the position that the actors have in a network and the interactions in which they engage must be explored. Indeed, typical social network studies address "issues of *centrality* - which individuals are best connected to others or have most influence - and *connectivity* - whether and how individuals are connected to one another through the network" (Newman, 2003: 2).

Nowadays, in social network analysis, there is an ongoing debate on the network structures that coexist and the degree to which they are more or less beneficial. On one hand, high level of network embeddedness is seen as more beneficial, due to the benefits they carry, such as a higher coordination and communication, which enhances trust (Coleman, 1988). On the other hand, instead, structures characterized by a huge number of structural holes, where some actors are connected to others which are not connected each other – are recognized as more advantageous (Burt, 1992b). In those networks, in fact, actors can get access to new information flows through brokers that "bridge" members of different groups. Other scholars, instead, believe that more value can be derived by the identification and analysis of the most important actors that are active in the network, those that possess a strategic or central location with many close relationships. Indeed, those actors can access to information more easily and transmit knowledge sooner than those in the periphery. Finally, a

different set of views – McFadyen and Cannella (2004) – stress the importance that the relational dimension can have in those networks, and focus on the analysis of the number and strength of direct ties, while not considering the embeddedness or centrality issues that the network structure possess.

Social capital, thus, can be nurtured by the structural characteristics of the network of relationships in which the enterprise is embedded. The growing interest toward the social network analysis has meant that researchers are nowadays debating on the pros and cons of specific structures, and their role in fostering information and knowledge flows and, thus, the innovative potential residing in those contexts. On one hand, there is Burt's structural hole theory, which sees brokerage as the most important "conductor" for novel information. It is based on Granovetter's argument that weak ties are the strongest ties when it comes to disseminate a new and a timelier type of knowledge. Indeed, they are characterized by a greater propensity to connect otherwise disconnected groups, thus having two main benefits: first, they carry a non-redundant type of information; and second, the ones acting like bridges, among those web of contacts, can enjoy the benefits of greater control over information diffusion and use. However, if networks with a strong presence of structural holes provide informational benefits, they may hinder the development of trust (Ahuja, 2000). On the other hand, there is Coleman's social theory, which looks at tightly-knit groups of relations as more beneficial. Indeed, networks that possess a heavy level of connections, where everyone is in a relationship with everybody, provide the following benefits: first, they make access to a more valuable type of information, since it has been demonstrated that the quality of knowledge flows deteriorates as they move into a chain of intermediaries (Baker and Iyer, 1992); second, closure reduces the risk associated with a lack of trust of the partners in the network, making collaboration more easy since it is governed by the presence of sanctions (Coleman, 1990). If inter-connected networks favour the propagation of trust, at the same time they inhibit the inflow of "fresh insights" (Ahuja, 2000: 452). Thus, the fundamental disagreement about the network structure that is responsible for social capital's benefit, depends on the fact that social capital is seen as a tension between closure and brokerage (Burt, 2000), and the choice between those structures is characterized by a significant trade-off between the advantages that they can provide. However, according to Ahuja (2000: 452), "under the appropriate circumstances, exclusive, cohesive, and non-redundant connections can all constitute social capital". Indeed, it is widely acknowledged in literature that there is no a simple, universal answer when it comes to identify the most beneficial structure of a network, since it is dependent on the benefits sought. For example, a network characterized by redundant and interlocking ties is more suitable for those organizations who wants to foster trust and cooperation (Granovetter, 1985; Coleman, 1990). Closed networks, in fact, are better suited when overcoming opportunism is a key essential to success (Ahuja, 2000). If firms' primary business requires speedy

access to diverse sources of information, in order to gain competitive advantages in the market, then an open structure with many, non-overlapping ties is most appropriate (Burt, 1992 a,b; Ahuja, 2000).

1.1 Objectives

The objectives of this study, thus, is to investigate the network structure that characterizes the art industry in Rome, and, in particular, to explore whether there is the presence, or not, of structural holes in the collaboration patterns developed in such contexts. An egocentric-network analysis will be performed, which looks at the network from the inside, and it collects data on one node (also called *ego*), and its ties (known as *alters*). The analysis, indeed, will be carried out through the examination of the network of one specific player in the Roman art industry: the Foundation Giorgio e Isa de Chirico.

1.2 Structure of the thesis

Chapter two comprehends a general overview of the definitions of creative and cultural industries, and the models used to classify them. Moreover, a study on the structural characteristics that those industries possess has been made, in order to provide a meaningful and comprehensive backgroung for subsequent analysis.

Chapter three is intended to capture the breadth and diversity of the cultural economy, by exploring the functionalities and potentialities of this system, which sees the intertwining of economic, cultural, and social dimensions in growth generation. The creative economy is a "miscellaneous and evolving concept", and it is considered as a feasible development option for innovation and multidisciplinary policy responses, since its knowledge-based economic activities are cross-functional in nature. In fact, by serving a large number of other sectors as well as public organisations and consumers, the creative industries may also stimulate growth and create spill-over effects in other industries.

Chapter four studies the current literature on the creative and cultural clusters, and it explores the benefits and limits that such spatial agglomerations may possess. It is widely acknowledged that creative and cultural industries tend to be heterogeneously distributed acrosse the territory, being concentrated in specific places, due to their need of repeated and recurrent interactions. Geographical proximity, indeed, enables a continuous flow of information, which results in superior performances. However, since some argued that the spatial dimension is neither a sufficient nor a necessary condition for the transmission of knowledge, other proximity dimensions have been investigated, and thus compared, in order to define whether the establishment of several type of closeness may have an impact on ties formation.

Chapter five focuses on the pivotal role that inter-firm networks and relationships have gained as unit of analysis. A review of the current literature is performed, and attention is given to the role that social networks, and social relationships are nowadays obtaining when it comes to generate and diffuse social capital. The main properties of a network structure are then described, such as its level of embeddedness, and the strength and depth of the relationships analysed. Moreover, an investigation of the different types of network structures have been performed, in order to provide a meaningful description of their advantages and disadvantages.

Chapter six, instead, expands those topics that underlie the study. It provides an explanation of the role of closed networks and structural holes in encouraging the diffusion of social capital, and it goes deeper into the description of brokerage as a source of innovative ideas.

Chapter seven illustrates the methodology used for the realization of this project. Firstly, it defines the set of analytical tools adopted for the study of social relations and the analysis of the network data. Secondly, the different approaches used in the literature are described, together with their features in terms of procedures. After having selected the study design, the background of the study is then depicted. Finally, the data collection methods and sources have been discussed and widely analysed in order to assess their relevance for the study at hand.

Chapter eight delineates the Foundation Giorgio e Isa de Chirico, and its daily activities. The network map of the Foundation's relationships is drawn, and its alters are thus identified and analysed. Subsequently, a study of the data collected has been performed, and the structural characteristic of the network under investigation have been highlighted. The final results are then discussed as well.

In chapter nine, the conclusions have been drawn, related to theoretical implications. Subsequently, the research limitations and flaws have been discussed, and the recommendations for future research are thus proposed.

2. THE CULTURAL AND CREATIVE INDUSTRIES

Born in the Frankfurt School in the 1930s and 1940s, the term *cultural industries*, intended to identify the "commodification of art as providing an ideological legitimization of capitalist societies and the emergence of a popular *culture industry"* (UNESCO, 2013: 20).

By the 1980s, the term began to acquire a more positive connotation: it was no more representative of the relation between culture and capitalistic enterprises, but it started to be referred to "forms of cultural production and consumption that have at their core a symbolic or expressive element" (UNESCO, 2013: 20). During the same period, UNESCO propagated the term worldwide, applying it to a broader range of fields, such as media industries, publishing, film, radio, art, music, fashion and design. At this point the term referred to all those "industries which combine the creation, production and commercialization of creative contents, which are intangible and cultural in nature; these contents are typically protected by copyright and they can take the form of a good or service" (UNESCO, 2013: 20).

The term *creative industries*, instead, encompasses a wider set of industries and activities. According to the UK Government's Department for Culture, Media and Sport (DCMS), creative industries can be defined as "those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property" (DCMS, 2001: 4). They include all the cultural industries' outputs, together with all the products or services that contain a substantial element of "artistic or creative endeavour". Therefore, the cultural and creative industries (CCI) focus on activities "whose principal purpose is the production or reproduction, promotion, distribution and commercialization of goods, services and activities of a cultural, artistic or heritage-related nature" [2].

2.1 Classifying the cultural and creative industries

Different models have been developed as a means for describing and understanding the specificities and characteristics of the cultural and creative industries. In the Creative Economy Report of 2013, UNESCO identified several classification systems for the cultural and creative industries:

- **DCMS Model**

The UK DCMS model includes thirteen sub-sectors which include: advertising; architecture; the art and the antiques market; the performing arts; crafts; design; designer fashion; film and video;

[2] Retrieved from http://www.unesco.org/new/en/santiago/culture/creative-industries/.

interactive leisure software; music; publishing; software and computer games; and television and radio.

- **Symbolic Texts Model**

The symbolic texts model divides the cultural and creative industries in three main categories:

- *Core cultural industries*, which include sectors such as advertising; film; internet; music; publishing; television and radio; video and computer games;
- *Peripheral cultural industries*, which refers to the creative arts;
- *Borderline cultural industries*, a broader category which comprehends consumer electronics; fashion; software; and sport.

- **Concentric Circles Model**

The concentric circles model illustrates the cultural industries as a series of circles that start from the core creative arts, whose activities influence the output of the other layers. The creative ideas originate in the first circle of the model, and the cultural content and creative occupations decline as one moves outwards through the layers of the model (Throsby, 2001). The concentric circles model distinguishes between four main circles:

- The *core cultural expression*, which includes literature; music; performing arts; visual arts;
- The *other core creative industries*, such as film; galleries; libraries; museums; photography;
- The *wider cultural industries*, which have as their core activities heritage services; computer games; publishing and print media; radio; television; sound recording; video.
- The *related industries*, as advertising; architecture; design and fashion, in the outer circle.

- **The Work Foundation Economy model**

The concentric circles model proposed by the Work Foundation analyses the "expressive value" that is generated and exploited by the cultural and creative industries, and it includes elements such aesthetic or symbolic values. Moreover, it captures the connection existing between the creative expression and the copyright. At the core of the model there is the *creative fields*, whose commercial output is characterized by a high level of "expressive value" and copyright protection. Then, the *cultural industries* include those activities which require a mass reproduction of expressive outputs. Instead, the *creative industries and activities* focus on an expressive value as essential to the performance of the sectors. Finally, the *rest of the economy* describes the sectors dealing with those sectors – manufacturing and services – which exploit the expressive output generated by the creative

industries. In this model, a distinction between cultural and creative industries is made, even if they are both placed within the economy.

- **WIPO Copyright Model**

The WIPO copyright model, instead, is based on those industries that are involved, directly or indirectly, in the "creation, production, and manufacturing, performance, broadcast, communication and exhibition, or distribution and sales of works and other protected matter" (World Intellectual Property Organization, 2003: 29). They include:

- *Core copyright industries*: advertising; collecting societies; film and video; music; performing arts; publishing; software; television and radio; visual and graphic art.
- *Partial copyright industries*: architecture; clothing and footwear; design; fashion; household goods; toys.
- *Interdependent copyright industries*: blank recording material; consumer electronics; musical instruments; paper; photocopiers, photographic and equipment.

- **UNESCO Institute for Statistics Model**

The UNESCO model classifies the cultural industries into two main categories:

- *Industries in core cultural domains*: festivals; design; interactive media; museums, galleries and libraries; film and video; performing arts; photography; publishing; television and radio; visual arts and crafts.
- *Industries in expanded cultural domains*: musical instruments; sound equipment; architecture; advertising; printing equipment; software; audio-visual hardware.

- **Americans for the Arts Model**

As for the DCMS model, the Americans for the Arts model does not distinguishes between the industries and sectors included. However, differently from the DCMS model, it includes twelve sub-sectors: advertising; architecture; arts schools and services; design; film; museums; music; performing arts; publishing; radio; television; visual arts.

The presence of these divergent models demonstrates that the relationship between the various components that make up the creative economy is not straightforward. This poses a real threat to policy making, since communities are continuously reshaping and modifying these models in order to adapt them to their local contexts and markets. For this reasons, the United Nations Conference on Trade and Development (UNCTAD) and the National Endowment for Science, Technology and the Arts (NESTA), developed their own models, with the aim of simplifying the creative context in the

policy making realm while capturing the relationship between those industries and the broader economy. According to these frameworks, indeed, the creative industries are at the centre of the wider economy, which is increasingly relying on creative goods and services to boost growth and competitiveness.

The **UNCTAD model** distinguishes between the *upstream arts* and the *downstream arts*. The former category refers to traditional art forms, which may have commercial value in themselves, such as the performing, literary and visual arts. The latter, instead, includes the applied arts, which derive their commercial value from their applications in other activities, such as design, advertising, media and related activities and publishing. The model incorporates both commercial and non commercial activities and it emphasizes their relationship. In particular, it demonstrates how the growth or decline in one area has an impact on another area.

The **NESTA model**, the model of "creative occupations", intends to analyse the ways in which commercial value is developed, and where it is generated, as well as the action to take to enhance it. From a specific sector – which only focuses on the creative industries by themselves – it shifts the focus toward the understanding of the economic contribution of creativity to the wider economy. This leads to a study of the creative occupations in both the traditional creative industries and the wider service industries such as education, business services but also manufacturing.

2.2 Characteristics of the cultural and creative industries

The numerous models available for the classification and description of the creative and cultural industries demonstrate how difficult is for policy makers to develop a unified framework of analysis. Indeed, the intricate discussion about the definitions and categorization of the creative and cultural industries, yields a high level of complexity, which derives also from the special features that those industries possess. First of all, cultural and creative industries are *idiosyncratic* in nature, and they are characterized by imperfect competition (Throsby, 2008; UNESCO, 2013). In addition, the presence of public, not-for-profit, and informal sectors produces a hybrid which is intricate and peculiar. The high level of heterogeneity can be found not only in the structure of the industries, but also in the parameters used to evaluate success. They include, indeed, both *extrinsic* and *intrinsic* values and identities. Another characteristic of the creative industries is the fact that they are both "*knowledge* and *labour* intensive": they require "specific skills and high level qualifications", together with the generation of creative results (Conference Board of Canada, 2013: 10).

Considering the different types of firms in the industry and their structure, the objective of such companies goes beyond the simple economic value. According to Throsby (2008), the utility function which represents the creative industries is a weighted sum of two values: economic and

cultural value[3]. The relative preference of the firm for achieving profitability or artistic and cultural success will, therefore, be reflected in the weights of the model, as well as the nature of the firm (its size) and the managers' objectives. In particular, the diversity with respect to the other sectors in the economy can be found in:

- The industry structure;
- The company's value chain of production;
- The nature of the output produced;
- The employment aspects.

2.2.1 The industry structure

The cultural and creative industries are constituted by a significant number of not-for-profit organizations, which work together with the public and private sector, and other commercial organizations. In terms of their size, the creative industries are divided in three main layers, which include:

- small and independent producers;
- quasi independent subsidiaries, which serve larger firms;
- and very large companies, usually multinationals, which operate in fields such as film making and publishing (UNESCO, 2013: 25).

In the cultural and creative industries, two aspect coexist: on one hand, a small number of large firms are "responsible" for a relevant proportion of the industry's output and its employment; on the other hand, the rest of the industry is made of a large number of smaller enterprises, which are of particular interest in terms of innovation studies. However, among the different sectors, something may vary. For example, in segments such as the press market, or the performing arts, the larger companies generate a smaller percentage of the revenues; whereas, in broadcasting, or in the music industry, what mentioned above holds true. Based on the type of organizations, three main groups can be identified (Throsby, 2008):

- ***Micro firms and small to medium enterprises (SMEs).***

They are the predominant firm type. Micro firms may include: individual artists that are acting as sole traders, among which some will sell directly to customers, whereas others will be engaged in

[3] Throsby (2008) identified the economic value and the cultural value as the values yielding the objective function of the firms in the cultural industries.

supplying goods and services as intermediate inputs to other firms (for example writers providing scripts to television companies). Due to their size, micro firms or SMEs usually are not able to handle all business aspects. Their value chain, indeed, is split up and the firm is only in charge of developing prototypes; whereas the larger firm works on the exploitation and reproduction of the final output.

This pattern leads to a two-fold situation in terms of entry barriers. For the smaller and creative firm, ideas and talent is all that matters, therefore market penetration does not require intensive investments. The low level of entry barriers, leads to a scenario in which there are many small firms competing each other with little differentiation in the offer to customers. On the other hand, the exploitation phase – which usually deals with elements such as distribution and marketing and which is usually carried out by larger firms – requires a higher level of initial budget, making barriers to entry extremely high and, on the other hand, margin pressure very low.

- ***Large commercial corporations***.

Especially in the media, publishing and music industry, large commercial corporations are the norm. They are the downstream companies of the value chain, which market the idea of the smaller, upstream companies and define the distribution and refinancing needs.

- ***Not-for-profit organizations (NPOs).***

They include voluntary organizations, such as unions, or performing arts as opera or music. Also *public cultural institutions* belong to this category. They refer to institutions, with a national presence, that are publicly owned or financed such as public art galleries, or theatre companies.

2.2.2 The company's value chain of production

The production of creative products requires first the development of a creative idea by the artist, which is subsequently combined with other inputs in order to produce cultural goods or services. Each of these steps adds value to the good or service in question, until it reaches the final consumer. The advantage of the value chain approach can be found in its ability to show and clearly picture the relationships existing between the traditional (or pure) arts, and the industrialized (commercial) ones, by describing the stages of the processes in the production of economic and cultural value. For the creative industries, the value chain can be divided into four main phases:

- **Origination**: creation of cultural and creative ideas and artefacts to embed in a specific product;
- **Production**: it concerns to the activities initiated to create commercially viable products;

- **Distribution**: it entails the diffusion of creative and cultural products in different platforms and channels;
- **Consumption**: it refers to the opportunity of end consumers to experience cultural and creative products.

However, researchers are nowadays questioning whether the value chain approach can be considered as a meaningful framework of analysis when it comes to depict and evaluate the innovation processes that take place in these contexts (Hearn and Pace, 2006).
According to Rainbird (2004), focusing only on the value chain analysis, leads to a static and linear approach, which does not take into account the dynamicity of the process under study. Indeed, by focusing exclusively on the product, the surrounding environment is ignored. Consequently, externalities and relationships outside the value chain are not considered, and thus not included. This results in the loss of data regarding important enablers or catalysts that may deliver value, but which do not belong to the aforementioned processes.

2.2.3 The nature of the output produced

The nature of the output produced allows for the classification of the creative industries into three main groups (Dapp and Ehmer, 2011):

- **market based**: software, advertising, design and architecture;
- **culture related**: such as the arts and performing arts, which tend to be considered as public goods;
- **mixed activities**: which possess elements coming from both categories. They include books, broadcasting, film, music, and press.

The production and the subsequent output of cultural industries includes thus both private and public goods (Throsby, 2008). The *private* component is linked with the "utilization" activities such as the purchasing of artworks, the admissions to music festivals and theatres, or the consumption of newspapers and television programs. The *public* good component, on the other hand, refers to activities such as the composition of music or of literature, once performed or published. However, public goods must be transformed into privately-tradable structures, in order to perform the market exchange. For example, compact discs or books enable the fruition of the creative good or service contained within them. It may also happen, instead, that the creative output can possess both natural characteristics, being both private and public. The public component, in those situations, derives from the community benefits that arts and culture are supposed to yield: benefits including the significance

of cultural production for national or local identity or the value placed on cultural diversity. Clearly, the non-market attributes lead to challenges not only for the decision making of firms and the application of strategies, but also for public policies information and implementation.

Besides the nature of the output itself, creative industries' products are **holistic** and **experience** products: they are not simply the sum of their attributes, since it is extremely difficult to disentangle the role of each individual part (e.g. TV shows). Moreover, differently from *search goods*, whose quality can be assessed before buying them, the *creative goods* must be consumed before judging them. In those cases, the perceived quality and the personal taste matters even more than the objective quality. Due to their **perishability**, they generate **uncertain demand**: what is "in" today, may be "out" tomorrow. This is what is known as "fads" or "fashions". In the creative industries, "success breeds success": people prefer more popular products, the one chosen by others (e.g. books). In addition, creative products are very **expensive to produce** (e.g. movie), but very cheap to re-produce (e.g. DVDs), making negatives extremely costly with respect to their copies. Finally, they are characterized by a **low repeat purchase rates**: repeat purchases are high in the category (e.g. music), but extremely low for single products (e.g. song).

2.2.4 The employment aspects

Another distinguishing characteristic of the cultural industries can be identified in the nature of the workforce. In recent years, studies around the "creative worker" have been developed consistently. Florida (2002) provides a clear description and definition of the creative class and its role in the society. In almost all the areas of cultural production, it is important to distinguish between *creative occupations*, which are those of actors, directors or copywriters (in the case of theatre industry), and *non creative occupations*, which refer to ticket-sellers, accountants or stagehands. The proportion of creative works and occupations in a creative enterprise varies between types and size of firms. For example, SMEs and micro enterprises tend to have a higher concentration of creative inputs, whereas such tendency is less observable in larger firms. Such trend can be observable in the Concentric Circles Model, which describes the cultural and creative industries as circles and layers which starts from the *core creative arts*, and terminates into the *wider cultural and related industries*, which can be found in the outer circle. As a result, the cultural and creative content and occupations decline as "moving outwards" through the layers identified (Throsby, 2008). Analysing the employment in the creative sector is important for two main reasons: as a rationale for policy interest, since job creation is a crucial aspect for it; and as an insight on the labour intensity and the number of creative workers, whose creative work may happen somewhere else (Higgs et al., 2008).

3. THE CREATIVE AND CULTURAL ECONOMY

The increasingly economic importance of the creative industries can be explained by its growing public interest. The creative industries are "regarded as one of the most promising fields of economic activity, in highly developed economies, having a great potential to contribute to wealth and job creation" (Müller et al., 2008: 3). Nowadays, there is an increasingly positive estimation between the cultural and creative industries, and what is defined as "the broader society".

The creative industries can provide several benefits to the economy at large: first, they allow countries and regions to show their unique cultural identities to the world; second, they provide a source of economic growth, and employment creation; third, at the same time, the creative economy has the potential of "promoting social inclusion, cultural diversity, and human development" (UNCTAD, 2008: III). As a matter of fact, culture, when "adequately nurtured, fuels culture, infuses a human-centred development and constitutes the key ingredient for job creation, innovation and trade while contributing to social inclusion, cultural diversity and environmental sustainability" (UNCTAD, 2010: XIX).

Therefore, the term *creative economy* has emerged as a means of describing how creativity and economic development are inextricably intertwined when it comes to generate growth. It characterizes the new area of economic activity which results from the coming together of the commercial and non-commercial segments of cultural production (Mt. Auburn Associates, 2000). Over the past decades, multiple definitions have been developed, in order to gain a deeper understanding of its functionalities and potentialities. Nowadays, the creative economy is seen as "a complex system that derives its economic value from the facilitation of economic devolution – a system that manufactures attention, complexity, identity and adaptation through the primary resource of creativity" (Cunningham et. al, 2008: 17). According to the Conference Board of Canada (2013: 3), a "creative economy extends beyond the cultural sector to harness creativity in order to bring about positive social and economic changes across a broad spectrum of industries, sectors and social organizations".

The creative economy, thus, is a miscellaneous and evolving concept, based on the idea that creativity, and the creative output, "has the potential to generate income, jobs and export earnings while at the same time promoting social inclusion, cultural diversity and human development" (Creative Economy Report, 2008: III). Moreover, due to the nature of its activities – *knowledge-based* and *cross-functional* –, the creative economy can be considered as "a feasible development option calling for innovative, multidisciplinary policy responses and interministerial action" (UNESCO, 2008: 15). Indeed, the creative industries encompass a wide range of components – economic,

cultural, social – which interact with technological and intellectual aspects. Moreover, by serving a large number of other sectors as well as public organisations and consumers, they may also stimulate growth and create spill-over effects in other industries.

Together with the definition of the creative economy, the *cultural economy* is a concept that has been expressed when it comes to describe the interaction between culture and the economy. According to this view, indeed, the economy itself is part of culture (Pollard, 2011), since it is "bound up with processes of social and cultural relations" (UNESCO, 2013: 24).

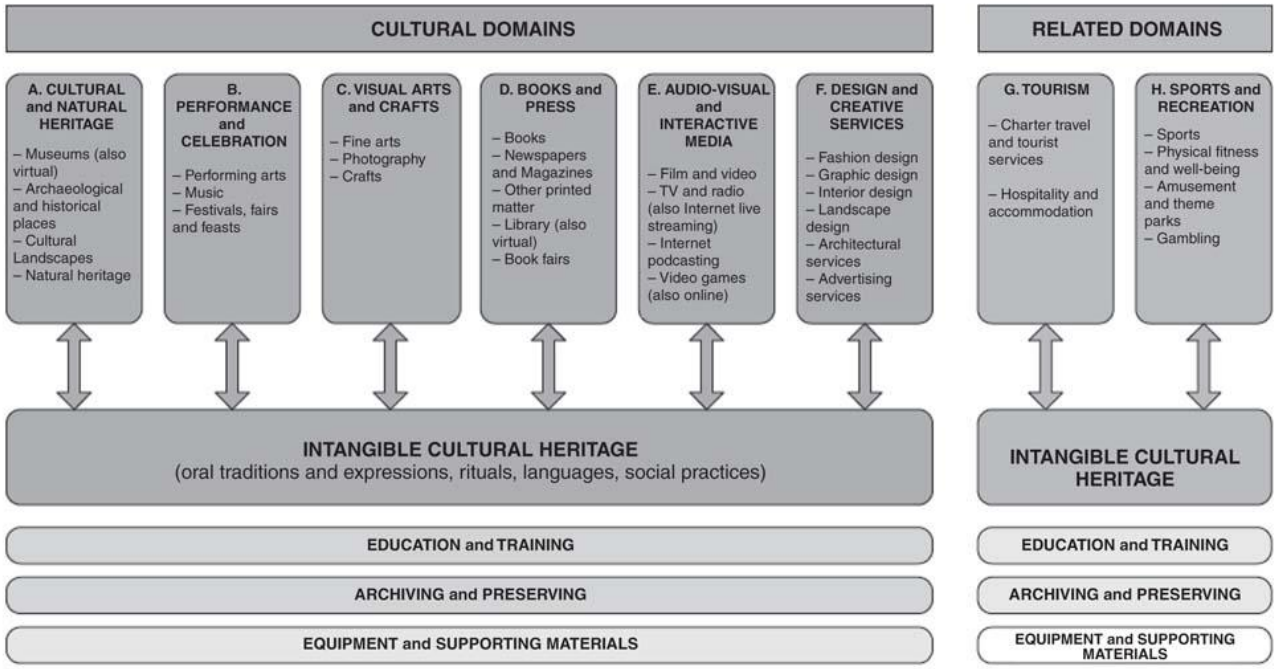
If the cultural economy reveals how "identities" and "life-worlds" are associated with the production, distribution and consumption of goods and services, the definition of Howkins (2001) is, instead, based on the four fields of intellectual property law: patent, trademark, industrial design and copyright; and it links the ideas of cultural creativity and economic innovation.

The differences between the creative economy and the other sectors can be found in the market risk, that is associated with the creative products – and makes them difficult to manage –, and the particular organizational structures, which characterise those industries. Moreover, other challenges can be encountered when dealing with the cultural and creative industries. In particular:

- studying and controlling the huge number of micro enterprises is extremely demanding, especially in developing countries;
- analysing its progress requires a broader picture, rather than just income and price information;
- and, finally, a new, more meaningful approach is needed, in order to identify and depict all the emergent networks of producers and consumers, who are arising in the market and who are driving innovation. Indeed, the large-scale approaches that are nowadays in places – focused on subsidies and supports of small magnitude –, cannot be considered anymore as valuable as they once were (UNESCO, 2013).

As a result, in 2009, UNESCO developed the Framework for Cultural Statistics, which is intended to capture the breadth and diversity of the cultural economy. The framework provides a detailed classification, definition and description of the cultural and creative industries and their detailed activities. Moreover, it exhibits the full range of cultural profession and practices around the world, in order to facilitate cross-national and cross-sectorial comparisons. Its main goal is to facilitate the understanding of those sectors and their features, as well as describing the relevance and importance that culture has in the economy at large. Clearly, due to the challenging and complex environment, in order to manage effectively those sectors, a deep understanding of its internal processes is required.

Figure 3.1 Framework of Cultural Statistics



Source: The 2009 UNESCO Framework of Cultural Statistics (UNESCO, 2009: 24).

The creative economy is characterized by the presence of formal and informal institutions, which tend to rely on processes and systems that are straightforward, making informality a key feature. Indeed, it is widely acknowledged that, due to the high number of enterprises "operating off the books", "the layer of governmental, commercial and civic institutions that is central to cultural life in advanced economies, e.g. public service broadcasters, museums, art schools, film studios, etc., is generally very thin" (UNESCO, 2013: 26). If, on one hand, this creates asymmetries; on the other hand, it fosters knowledge diffusion.

4. THE CULTURAL AND CREATIVE CLUSTERS

The current literature has been studying creativity and the extent to which creativity and culture are becoming relevant in the analysis of innovation and economic development (Ginsburgh and Throsby, 2006). According to a huge stream of literature, due to the interdependent relationships existing between place, culture and economy, focusing on the space and place in which companies and organizations are located is of a crucial importance (Pratt, 2000; Johns, 2005). Indeed, geographical proximity and urban culture are considered as important features for the cultural industries, and researchers have analysed the role that those industries play in fostering innovation, when concentrated in specific places. From the literature, it emerged that creative industries tend to be "clustered" in space, thus being heterogeneously distributed across the territory (Scott, 2005; Cooke and Lazzeretti, 2008). They, indeed, are concentrated in specific cities, even more that most other sectors (Maskell and Lorenzen, 2004; Freeman, 2010). According to Scott (2004), inter-organizational collaborations happen mostly in "larger" cities. Clearly, the choice of locating in the same industrial space – or economic region – it is not accidental, but, rather, it offers certain competitive advantages. Firms can compete and collaborate at the same time, triggering innovation and thus generating positive knowledge spill-overs. As a result, it increases the opportunities for sharing both information and knowledge, while resulting in a reduction of transaction costs (UNESCO, 2013).

4.1 Definition of clusters

Clusters are defined as "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (for example universities, standards agencies, and trade associations) in particular fields that compete but also cooperate" (Porter, 1998: 199). As the concept has been widespread among literature, cluster definitions started to proliferate. The DCMS defines creative clusters as "groups of competing and co-operating businesses that enhance demand for specialist labour and supply networks in a particular location. Such infrastructure depends not only upon the vitality of the creative sector itself, it is also underpinned by public policy and significant public investment" (DCMS, 2006: 56). According to Saxenian (1994), clusters must be defined as systems of informal, socio-economic relations across firms and institutions; whereas De Propris and Driffield (2005) advocate that clusters are places where there is an agglomeration of firms, and that the relationships between those actors are characterized by a "specialized institutional thickness". Cooke and Huggins (2003: 4) described clusters as "geographically proximate firms in vertical and horizontal relationships involving a localized

enterprise support infrastructure with shared developmental vision for business growth, based on competition and cooperation in a specific market field". Lange et al. (2008), instead, requires people both working and living in the same place. Other definitions have emerged, focusing on several aspects such as the connection existing between the size and dimensions of the firms and the governance in place (De Propris, 2001); the firms' relationships with other actors and institutions and their degree of "embeddedness" - their strength - (Bellandi and Sforzi, 2003); or even the innovation processes that are involved in the interactions (Camagni, 1991). The variety of definitions mirrors the blurriness of the cluster concept, even if its still recognized as a valuable framework when it comes to explain and/or describe the geographical dynamics of innovation and growth.

4.2 Clusters in the cultural and creative industries

In the cultural and creative industries, clusters are defined as "vertically disintegrated networks of production units that can function flexibly when faced by high levels of instability and the risk that prevails in the production and consumption of cultural goods and services" (Creative Economy Report, 2013: 29). Clusters emerge in highly dynamic and competitive environments, where the production processes are disassembled, and many firms participate in the value chain. In those industries, thus, a more open and collaborative model for the organization of productive and innovative activities, is more suitable. This models, indeed, can spread informational benefits in all those sectors that interact with them, fostering the "creative nudging of innovation" (Potts and Morrison, 2008).

In the creative sectors, firms cluster around markets in order to take advantage of production inputs that are unique, and they may include elements such as labour and natural resources (De Propris et al., 2009). The creative industries are characterized by the presence of both highly skilled and unskilled workers, which are employed in project-oriented or part-time form of works, usually temporary or free-lance. The creative work then blooms in this "creative field", which is constituted by "network of firms and their interactions, as well as the facilities and social overhead, such as schools, universities, research establishments, design centres, etc., that complement or feed the innovative capacities of these networks" (Creative Economy Report, 2013: 29).

The norms and traditions that characterize those contexts complement and feed the innovative capacities of these networks, and create a special "atmosphere", where "knowledge and information are in the air" (Belussi and Caldari, 2009). The "macro-culture" that results from shared rules and values is an important tool for both coordination and collaboration (Jones and Lichtenstein, 2008). In addition, this set of local relationships is able to stimulate and channel individual expressions of

creativity, and to generate positive feedbacks, which play a central role in clusters (Baptista and Swann (1999).

Over time, it emerged that different factors stimulated the development of creative clusters, such as differences and/or similarities between the infrastructures needed for their production processes, or the cross-overs established between their social and economic network (De Propris et al., 2009). According to De Propris and Hypponen (2008), creative clusters can be defined as places which bring together:

- A "community of creative people" – as defined by Florida (2002) – which share the same interest in novelty, creativity and innovation (not necessarily in the same subject);
- A "catalysing place", where "people, relationships, ideas and talents can spark each other";
- An "environment that offers diversity";
- A "thick, open and ever-changing network of inter-personal exchanges that nurture individuals' uniqueness and identity".

4.3 Benefits of clustering in the creative industries

Researches show that firms that cluster together tend to benefit from agglomeration, external economies and diversity (Porter, 1998; Bellandi, 2003). *Agglomeration economies* occur when "the geographical proximity produces collective benefits - contributing to local competitiveness and economic growth" (Chapain et al. 2010: 8). *Urbanisation economies,* instead, are the result of a cross-sector or industrial collaborations from which unexpected results or innovations may occur.

4.3.1 Agglomeration economies

The agglomeration economies are defined as advantages on costs or quality that arise from the geographical proximity of both resources and organizations (such as firms and institutions), with whom a collaboration have been established (Lazzeretti et al., 2009). Those benefits derive from spatial concentration and generate efficiency gains that benefit the network and system of firms in the cluster, not the single firm internally – such as scale and scope economies (Malmberg and Maskell, 2002). Agglomeration economies can be understood in terms of: "*sharing* infrastructure facilities; *matching* specialized input and output relations, or, matching of jobs and workers; and, *learning* – inter-firm exchanges of information" (UNESCO, 2013: 29).

According to De Propris et al (2009), creative localisation leads to benefits firms in three ways: through the establishment of sustained relationships between firms and individuals; through the thickening of the institutions and their role; and through the development of knowledge spill-overs. Firstly, the ongoing interactions that are developed on a daily basis between firms in the cluster

build up trust and social capital, which, in turn, makes interaction and collaboration between actors much easier (De Propris and Hypponen, 2008). This collaborative behaviour leads to two main outputs: it reduces uncertainty about partners' behaviour, and it enhances the availability of information and the screening of new commercial opportunities. Indeed, firms have a strong incentive to co-operate and develop a trustworthy behaviour, since being excluded from the network of exchanges is too risky.

Secondly, a wide range of services is required in order to support the activities of firms in the cluster. This results in a synergistic environment in which both the public and the private are willing to develop solid infrastructures which include education and training institutions, as well as government funded agencies and private lobbying organizations (Lorenzen and Federiksen, 2008). Thirdly, industrial clustering allows companies to access to skilled staff and service, and in turn, to capture profitable knowledge spill-overs. Firms in co-location, indeed, initiate processes of **knowledge creation,** through learning and innovation, and **knowledge transfer**, through diffusion and synergies (Klepper, 2008).

The innovative potential of the creative industries supports the idea that, the activities in which those industries engage, can have a direct and indirect effect. On one hand, they can directly contribute to innovative processes in the region or area in which they are located; on the other hand, they can indirectly benefit the economy, by generating valuable knowledge spill-overs. Such spill-overs occur when the knowledge activities of one firm, or industry, produce benefits for another actor that the former is not able to fully capture. *Spill-overs* emerge when firms can benefit from knowledge, innovation or market opportunities that they have not paid for directly. They are unremunerated benefits that result when new ideas, discoveries, and cultural innovation derive from other activities (Markusen and Schrock, 2006). Such positive externalities are developed when business communicate and exchange both goods and services with each other (De Propris et al., 2010). They result from ongoing, everyday contacts between firms and institutions, networking through geographical proximity, formal arrangements such as joint-ventures and research work with universities. Clearly, knowledge spill-overs are difficult to quantify and analyse, since they are "invisible, they leave no paper trail by which they may be marked and tracked" (Krugman, 1991: 53).

4.3.2 Urbanization economies

If *agglomeration economies* capture all those benefits that derive from the complementarities between firms that are specialized in the same sector, *urbanization economies* refer to the positive and beneficial externalities that can be developed by the close location of diverse sectors. Creative clusters flourish in those environments where diverse sectors can be found. According to this

framework, the higher productivity and longer-term growth (that can be found in some places more than others) can be explained by the geographical proximity of different sectors rather than specialization in the same sector (Audrechst and Feldman, 1996). Urbanization economies, indeed, occur through knowledge spill-overs that are created across sector boundaries. They have a stronger impact, the larger the size or capacity of the local consumption market. Indeed, "the variety of activities and people generate a dense and varied network of agents that fosters mutual economic and social support, knowledge transfers through cross-fertilization mechanisms, and promotes innovation" (Lazzeretti et al., 2010: 5). Diversity, indeed, can favour the "cross-pollination of ideas, technologies and knowledge" between the different actors involved (De Propris et al., 2009: 10).

4.3.3 Related variety concept

According to a huge part of the literature (Boschma and Iammarino, 2007), beneficial externalities are more important in those geographical areas where diverse sectors are able to develop intense relationships. This is known as the *related variety concept*. According to this framework, variety can be a source of competitive advantage, as long as the diverse sectors can entrust complementary capabilities and resources (Boschma and Iammarino, 2007). In those cases, spill-overs tend to take place around a theme, rather than a sector. This can be observed in those industries that are related because of shared or complementary competences (Boschma and Iammarino, 2007). Indeed, effective communication, interactions and learning, among different industries, can contribute positively to the absorptive potential of these firms. Cohen and Levinthal (1990: 128) define absorptive capacity as "the ability of a firm to recognize the value of a new, external information, assimilate it, and apply it to commercial ends". According to Dyer and Singh (1998: 665), most important is the concept of *partner-specific absorptive capacity*: "the ability that a firm has to recognize and assimilate valuable knowledge from a particular alliance partner". This would lead to an implementation of specific inter-organizational processes that entail the identification and transfer of know-how between the collaborating firms (Dyer and Singh, 1998). However, depending on the nature of the activities to be performed – and the inter-linkages of the firms in the industries – different spill-overs can be produced (Boschma and Iammarino, 2007).

4.4 Proximity dimensions

Geographical proximity defines the spatial closeness of organizations in the same physical location, and is the most explored dimension in the literature when it comes to analyse knowledge spill-overs and flows (Anselin et al., 1997). According to Hoekman et al. (2010), those firms that are close geographically are characterized by a great deal of interactions. Moreover, researchers have

been extensively investigating whether the possibility of tie formation is higher when there is geographical proximity (Morgan, 2004), or whether other potential drivers influencing network formation may exist and have a privileged role (Boschma, 2005). Indeed, when it comes to establish a partnership or a collaboration, firms in close proximity need also to be embedded in social and institutional systems, thus requiring other types of "network closeness". In particular, it emerged that other forms of proximity do exist, that, in many instances, turned out to be more important, as studies have empirically demonstrated (Ponds et al., 2007; Breschi et al., 2010). For example, Boschma (2005) identified other four dimension of proximity that can provide collaborating firms with informational benefits and influence the likelihood of interactions: cognitive, organizational, institutional and social proximity.

Certainly, firms in co-location generate several benefits especially when it comes to deal with the diffusion of innovation, which turns out to be faster and more persuasive. According to Von Hippel (1994), the diffusion of tacit knowledge is favoured if the actors in the network are phyisically proximate. The relationships developed among spatially concentrated actors, indeed, increase the level of trust and the diffusion of such know-how (Dei Ottati, 2003; Gertler, 2008), thus multiplying the effects of network spill-over (Grodach, 2011). However, such spill-overs are not automatic (Frenken et al., 2007; Boschma and Iammarino, 2009).

As already mentioned, the transfer of knowledge requires the intention to interact and collaborate, which requires to share information, absorb it and, subsequently, learn from it. No matter how close geographic proximity may be. According to Markusen (1996), indeed, the most important dimension to be considered is the extent to which actors involved in the relationship are able to understand each other, therefore having a "common interpretative scheme". This is known as *cognitive* (or *technological*) proximity, and it is considered as the most important element for learning. Since knowledge transfer is a complex and discontinuous process (Cohen and Levinthal, 1990), "intellectual" proximity is considered even more important than physical proximity (Moodysson et al., 2008). Indeed, if the actors involved in the relationships are not able to understand each other, it would be extremely challenging to interpret and assimilate the aforementioned know-how (Noteboom, 1999). As a result, firms and actors that possess a similar knowledge base are able to collaborate more easily and efficiently, since cognitive proximity is an essential condition for learning.

Social proximity is connected with the type of the relationships that are developed by the actors in the network (Uzzi, 1996). Social proximity is considered as one of the most important measures, since the presence of social ties is a crucial dimension for the diffusion of knowledge and the exchange of ideas (Granovetter, 1985). It is a measure linked with trust and reputational effects,

which derive from repeated interactions between the actors in the network and result from past experiences (Breschi and Lissoni, 2009). Especially in risky and uncertain environments, historical patterns of interaction have a strong impact on future knowledge sharing. Indeed, organizations are more likely to co-operate again in the future, if past cooperation, both direct or indirect, where characterized by a positive outcome.

Institutional proximity defines the institutional system which includes the set of norms and incentives that can be found in the same country (Hoekman et al. 2009), or within industries or governments (Ponds et al. 2007). A common institutional background, which provides standard procedures and routines that are shared by firms, reduces uncertainty and thus favours pro-cooperative attitudes. These, in turn, enhance the possibility of an agreement and the exchange of knowledge (Gertler, 2003).

Finally, *organizational proximity* means being member of the same organizational entity, as it happens for two subsidiaries of the same parent company (Balland, 2012). Such arrangements take place within or among firms, and may range from informal relations between companies to formally organized firms. As in the case for institutional dimension, organizational proximity is characterized by a shared set of rules and best practices, which diminishes opportunistic behaviour (Kirat and Lung, 1999).

Proximity, therefore, can take several forms and it is not necessarily linked with co-location. Knowledge networks within clusters are "uneven and selective, not pervasive and collective" (Giuliani, 2007), meaning that spatial proximity is neither a sufficient nor a necessary condition for the transmission of knowledge between the actors in the network. However, it has been empirically demonstrated that, when controlling for the five forms of proximity, the geographical dimension has a positive effect in terms of ties formation in knowledge networks (Balland, 2012; Hardeman et al., 2012). Indeed, the positive correlation between geographical and non-geographical types of proximities indicates that the presence of the former facilitates the establishment of the latter (Balland et al., 2013).

5. INTER-FIRM NETWORKS AND SOCIAL NETWORK ANALYSIS

In the last decade, it has been widely recognized how firm's critical resources may extend well beyond firm boundaries. The cluster theory, the related variety concept, and the diffusion of knowledge spill-overs demonstrated that organisations interact with other firms or institutions on a daily basis, giving rise to industrial networks where long-term relationships affect both the performance and the evolution of other actors. The differential firm performance is no more simply a function of the industry's favourable characteristics (*industry structure view*), nor the result of the accumulation of firm's internal resources that are valuable, rare, non substitutable and difficult to imitate (*resource based view*). Rather it emerged that the advantages or disadvantages of firms are linked with the advantages or disadvantage of the network of relationships in which they are embedded (Dyer and Singh, 1998). Network structures provide several benefits to those actors that are embedded in the structure. They allow companies to manage their value chain in a global scale, and to lower their costs (Jones and George, 2003). Moreover, they combine both autonomy and flexibility, as a result of increased control and efficiency (Jones and George, 2003). Consequently, competitive advantages are defined as *inter-organisational* (Oliver, 1990): they must be found outside the firm, in its external network of relationships. Indeed, the increasing number of alliances and partnerships that have developed during the past decade, suggests that inter-firm networks are gaining a pivotal role as a unit of analysis.

Nowadays, new forms of network organization, characterized by a collaborative exchange relationship, are replacing the classical ones. These type of organization "operates without hierarchical control but is embedded, by dense lateral connections, mutuality, and reciprocity, in a shared value system that defines 'membership' roles and responsibilities" (Achrol and Kotler, 1999: 148). In such environments, where relations may be linear or more complex, actors in the network are interconnecting each other and with resources and knowledge (Hakansson and Ford, 2002). Moreover, repeated interactions with different actors in the networks allows the development of "macro-cultures" (Jones et al., 1997: 926), where shared norms, values and beliefs can be found, and which are considered by researchers as indirect tools for project coordination.

Clearly, the analysis of the industry structure and the internal capabilities of firms can not be forgotten. Changes in industrial settings have an influence on the network formation and life-cycle. Relationships can be created, modified or dissolved, due to the entry or exit of firms (Boschma and Frenken, 2010). Indeed, the interactions established in a network can come and go, and thus the stability of inter-firm networks depends on the continuous flow of the nodes, especially if they lead to disruptive technological changes (Rosenkopf and Padula, 2008).

However, it is widely acknowledged that inter-firm networks have a strong influence on firms' performance and innovation. Scholars from economic geography have posed a lot of attention on how this process come into being (Ahuja et al., 2009; Cassi and Plunket, 2010; Balland, 2012). In particular, in the last decade, network studies intended as a new framework for analysis have obtained a great success among literature (Grabher and Ibert, 2006; Bergman, 2009; Ter Wal and Boschma, 2009).

5.1 Inter-organizational networks

Inter-organisational networks are the result of a cumulative process during which relationships are created and developed in a long-term perspective. According to Williams (2005) and Manning (2008), inter-organizational relationships are developd among actors in the network, which are independent and whose interactions are different from hierarchies and markets (Uzzi, 1996). Indeed, the interactions are continuous, and organizations are connected in the network through both direct and indirect links (Jones et al., 1997). Thus, relationships are of a different nature: they are no more only market relationships, but rather social relationships. As a result, there is no legitimate authority, who can regulate the exchange, even if a legal contract may exist (Provan et al, 2007).

Inter-organisational relationships result in inter-organisational learning, since "organisation learn by collaborating with other firms" (Dyer and Singh, 1998: 664). According to Von Hippel (1988), inter-organisational learning is critical to competitive success since a firm's alliance partners can be, in most cases, the most important source of information, and, subsequently, new ideas. In some industries, more that two-thirds of the innovations can be traced back to customers' or suppliers' initial suggestions or ideas (Von Hippel, 1988). This depends on the fact that regular patterns of interaction, known as *inter-firm knowledge sharing routines*, allows firms to "identify valuable know-how or information, and to transfer it across organizational boundaries" (Dyer and Singh, 1998: 664). This inter-firm processes facilitate knowledge exchanges between alliance partners and generate *relational rents*, which are at the basis for a sustained and long-term competitive advantage. Relational rents are defined as "supernormal profit jointly generated in an exchange relationship that cannot be generated by either firm in isolation and can only be created through the joint idiosyncratic contributions of the specific alliance partners" (Dyer and Singh, 1998: 662). According to Dyer and Singh (1998), those relational rents can be possible only when "alliance partners combine, exchange, or invest in idiosyncratic assets, knowledge, and resources/capabilities, and/or they employ effective governance mechanisms that lower transaction costs or permit the realization of rents through the synergistic combination of assets, knowledge, or capabilities" (Dyer and Singh, 1998: 662).

Inter-firm collaborative networks can, thus, provide two distinct kinds of benefits. On one

hand, they allow firms to combine knowledge, skills and physical assets, resulting in intense resource sharing. On the other hand, they provide access to knowledge spill-overs, "information conduits through which news of technical breakthroughs, new insights to problems, or failed approaches travels from one firm to another" (Ahuja, 2000: 427). According to Ahuja (2000), it is important to differentiate between know-how and information. In this way, indeed, it is possible to recognize the differences existing between resource sharing and knowledge spill-overs.

Know-how involves tacit knowledge, which is usually extremely difficult to codify (Kogut and Zander, 1992). It refers to accumulated skills and expertise in some activities, and it results in outperformances since leads to advantages that are more sustainable (Dyer and Singh, 1998). According to Ahuja (2000), resource sharing encompasses both know-how and physical assets. *Information*, instead, refers to knowledge that is easily codifiable and it can be transmitted "without a loss of integrity once the syntactic rules required for deciphering it are known. Information includes facts, axiomatic propositions, and symbols" (Kogut and Zander, 1992: 386). Information, indeed, refers to facts and/or discrete information that can be transferred in a relatively complete form, through simple communication (Dyer and Singh, 1998).

The environment of both production and consumption of the creative industries is constituted by complex social networks (Potts et al., 2008). Collaboration patterns are, therefore, extremely important, since there is a high level of interaction between multiple actors that are autonomous and interdependent (Caves, 2003). Creative industries are characterized by project-based production systems, which often require a joint effort from the individuals or firms involved. Creative goods are usually intended as collective goods, whose production requires the integration of complementary resources. As a result, they become the outcome of a "network of activities" (Belussi and Sedita, 2008: 239). Thus, in order to achieve success in those industries, the level of embeddedness of the companies and organizations in the network is fundamental (Grabher, 2001).

Inter-firm collaborations in creative industries, indeed, have a dual function: not only do they serve as a "conduit" of information flows, but also of reputation and status (Heebels and Boschma, 2011). Due to the high level of uncertainty, which characterizes the production of cultural products, reputation and status are a crucial element to consider. Nobody knows whether the creative product will be accepted or rejected by the larger audience before it is launched, and thus, in order to capture the attention of the public, gaining access to partners with high levels of status is essential. For SMEs, in particular, the networks developed by long-term and strong inter-organizational relations have a great potential, and are important for the firm's growth.

5.2 Social capital

In the analysis of knowledge creation and diffusion, social capital has been identified as a critical aspect to consider (Nahapiet and Ghoshal, 1998). The social capital theory sees social relationships as valuable resources and it emphasizes on the impact of such collaborations on companies' performance. Ostrom (2000: 176) defines social capital as "the shared knowledge, understandings, norms, rules and expectations about patterns of interactions that groups of individuals bring to a recurrent activity". Putnam (1993: 167) states that social capital "refers to features of social organization, such as trust, norms and networks, that can improve the efficiency of society by facilitating coordinated action". In such context, trust is considered as the confidence that one actor has in another's reliability and integrity, and is seen as an important channel for the generation of long-term relationships. Cote and Healy (2001: 41) describes social capital as "networks together with shared norms, values and understandings that facilitate co-operation within or among groups". Burt (2000: 1) stated that social capital is "a metaphor about advantage". The social capital metaphor can be identified in the fact that those people "who do better are somehow better connected" (Burt, 2000: 2). Indeed, a huge stream of literature identified social relations as being beneficial for individuals and organizations in several ways. Social capital can facilitate coordination and cooperation (Anderson and Jack, 2002), through the spreading of knowledge and innovation (Batt, 2008) in the network. Moreover, since it is hard to be copied, it provides companies with unique resources, therefore becoming a source of sustainable long – term advantages (Luczak et al., 2010). According to Chuang et al. (2012: 159), social capital can be considered as "the main source of opportunity identification". In addition, Luckzak et al. (2010) suggests that positive patterns of social networking encourage the development of trust and the acquisition of resources. Conversely, if social capital is missing, then the markets do not work smoothly and the economic opportunities may be limited (Rose-Ackerman, 2001).

In conclusion, the social capital perspective is an extension of the industrial network approach, and studies the social relationships that are embedded in business relationships. Network ties are considered to act as conductor of social capital. They make resources available to individuals or groups as a result for being part of a network (Bourdieu and Wacquant, 1992). According to Granovetter (1992), organizations and individuals take decisions without ignoring the social context in which they are embedded: their actions are developed on the basis of concrete and on-going relationships. It is, therefore, unrealistic to analyse and study inter-organizational collaborations, and the exchange and sharing of resources, if the social context in which those exchanges are embedded is not take into consideration.

5.3 Social network theory

The network, or social network theory, stresses the importance and relevance of inter-firm collaborations, and it defines society as a network made of relations (ties) between the actors (nodes) in the network (Wasserman and Faust, 1994).

The social network theory studies the "relations, ties, patterns of communication, and behavioural performance within social groups" (Abraham et al., 2010: 27), where actors and their actions are seen as "interdependent rather than independent, autonomous players". The unit of analysis, therefore, is no more the individual itself, but rather "an entity consisting of a collection of individuals and the linkages that exist between them" (Wasserman and Faust, 1994). Indeed, relational ties and linkages between actors are seen as channels for the transfer or flow of resources, which can be either material or non-material (Wasserman and Faust, 1994; Adler and Kwon, 2002). The social network theory stresses the importance that personal ties have in providing access to resources and knowledge base, and thus aiding the exchange and transfer of information. In particular, the network analysis focuses on *dyads* (relationships between two actors and their ties), *triads* (relationships between three actors and their ties), and *larger systems*, which include sub-groups of individuals or even entire networks (Wasserman and Faust, 1994).

The social network theory, thus, sees the networks in the society as overlapping relationships, which can connect individuals, groups, and organizations. A network is defined as a "set of items, called *vertices* or *nodes*, with connections between them, known as *edges*" (Newman, 2003: 2). In social science, a network is a set of actors (also called *agents* or *nodes*), that may have relationships (*links* or *ties*) with one another. Networks can be characterized by few or many actors, with one or more relationships between each other (Izquierdo and Hanneman, 2006). A network characterized by a single type of relationship among the actors is called *simplex*. A network with more than one kind of relationship is called *multiplex*. In such contexts, ties can be *directed* or *undirected*. According to Izquierdo and Hanneman (2006), the former refers to those relationships that originate in a source actor and reach a target actor ("to be a parent of"), the latter describers those ties that represent co-occurrence, co-presence, or a bonded tie between the pair of actors ("to be a sibling of"). In order to analyse the network in a meaningful way, researchers found that both the position that the actors hold in a network and the interactions in which they engage must be explored. Indeed, typical social network studies address "issues of *centrality* - which individuals are best connected to others or have most influence - and *connectivity* - whether and how individuals are connected to one another through the network" (Newman, 2003: 2).

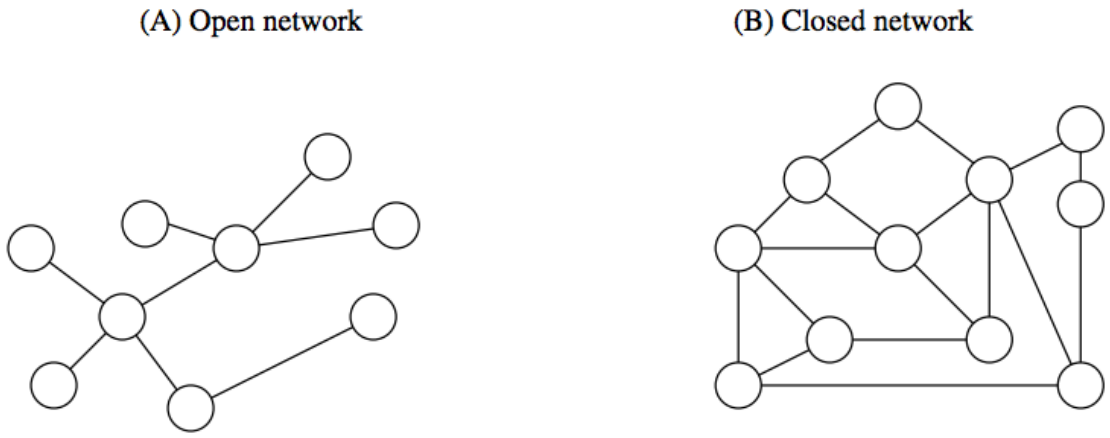
In the social network analysis, there is an ongoing debate on the network structure that coexist and the degree to which they are more or less beneficial. On one hand, high level of network

embeddedness is seen as more beneficial, due to the benefits they carry, such as a higher coordination and communication, which enhances trust (Coleman, 1988). On the other hand, instead, structures characterized by a huge number of structural holes, where some actors are connected to others which are not connected each other – are recognized as more advantageous (Burt, 1992b). In those networks, in fact, actors can get access to new information flows through brokers that "bridge" members of different groups. Other scholars, instead, believe that more value can be derived by the identification and analysis of the most important actors that are active in the network, those that possess a strategic or central location with many close relationships. Indeed, those actors can access to information more easily and transmit knowledge sooner than those in the periphery. Finally, a different set of views (McFadyen and Cannella, 2004) stresses the importance that the relational dimension can have in those networks, and focuses on the analysis of the number and strength of direct ties, while not considering the embeddedness or centrality issues that the network structure possess.

5.4 Network structure

Network structures are usually described as open or closed systems (Burt, 1992a; Kogut, 2000; Uzzi, 1996). The *open structure* is the "outcome of the competitive struggle between parties motivated by self-interest" (Andersson et al., 2005: 6). The peculiarity of this network type is that it is characterized by a non-redundant, unique relationships. Ties are redundant to the degree that they lead to the same actors (Burt, 2000). Therefore, non-redundant relationships can be found where there is only one path between two actors in the network (figure 5.4.1). According to Burt (2000), redundant relationships can be identified by two main indicators: *cohesion* and *equivalence*. Cohesive contacts indicate strongly connected individuals or groups, whereas structurally equivalent contacts are those type of relationships that are characterized by the same third party. In those situations, the source of information is likely to be the same, leading therefore to a redundant type of information benefits. Open networks, thus, favour the diffusion of new knowledge, since they do not result in the same knowledge. According to Burt (1992a), those actors which bear multiple, non-redundant relationships with the others players in the network, who are not connected to each other, convey a strong brokerage position known as *structural hole*. According to Andersson et al. (2005), firms located in structural holes have a stronger position since they control the knowledge flows that came from different networks. In these networks, several hierarchies may exist, where the firm who bridges the structural hole "earns the credit" (Kogut, 2000).

Figure 5.4.1 Open versus closed network



Source: *Opportunities, relational embeddedness and network structure (Andersson et al., 2005: 7).*

The *closed network*, instead, is based on the idea that firms in the network coordinate both their efforts and actions. The continuous knowledge flow enhances coordination between the actors in the network (Coleman, 1990) and permits the evaluation of the quality of the knowledge, through a comparison of the information received (Kogut, 2000). In addition, the regular relationships existing between the actors in the network, results in a resolution to collective action problems (Kogut, 2000). However, according to Andersson et al. (2005), the knowledge that flows in a closed network is received by several actors, thus reducing the degree of novelty of the information.

The position occupied by the firm in the network is described by the structure of the network, which goes beyond the immediate relationship. Indeed, the advantages offered by the different positions in the network are several. For example, a firm in an *open* network, positioned between two other unconnected firms, can control the knowledge flow between the two actors, and also influence others' access to knowledge (Burt, 1992 a,b). The possibility to control how and what type of knowledge is flowing through the network, and to keep critical or privileged knowledge within the boundaries of the firm, is an important value-added given by the structure of the open network. In open networks, in order to exploit opportunities, firms must limit their knowledge flow, thus reducing cooperation and limiting the fostering of cooperation.

On the other hand, *closed* structures are characterized by a flow of new knowledge inside its network that is limited, but which favours cooperation and coordination (Andersson et al., 2005). Elements such as joint search and learning are usually available in closed networks, but absent in open networks. If the open network benefits only the broker, or the "bridging firm", the closed network benefits the whole (Burt, 1992a; Kogut, 2000). In the closed network, benefits are not

attributed to the efficient flow of knowledge, but rather to the high level of collaboration that is promoted by the large quantity of redundant relationships (Andersson et al., 2005). However, according to Uzzi (1997), there is the risk of becoming stuck in the networks, where too many relationships are established. Indeed, when the system is too close, and there is a lack of connections with firms outside the network (Burt, 1992a), the flow of new knowledge may be reduced, thus limiting the enrichment of the information available in the network. Indeed, according to Burt (1992a), the quantity of new knowledge is smaller in closed networks than in open structures.
The reason behind this statement is the following: if a firm A has a relationship with a counterpart, say, firm B, which in turn has a relationship with firm C, firm A should invest in engaging a new relationship with firm D while leaving the relationship with firm C. This depends on the fact that the knowledge that firm A receives from firm B already incorporates the information contained in firm C, since they are partners – or at least they communicate directly (Burt, 1992a).

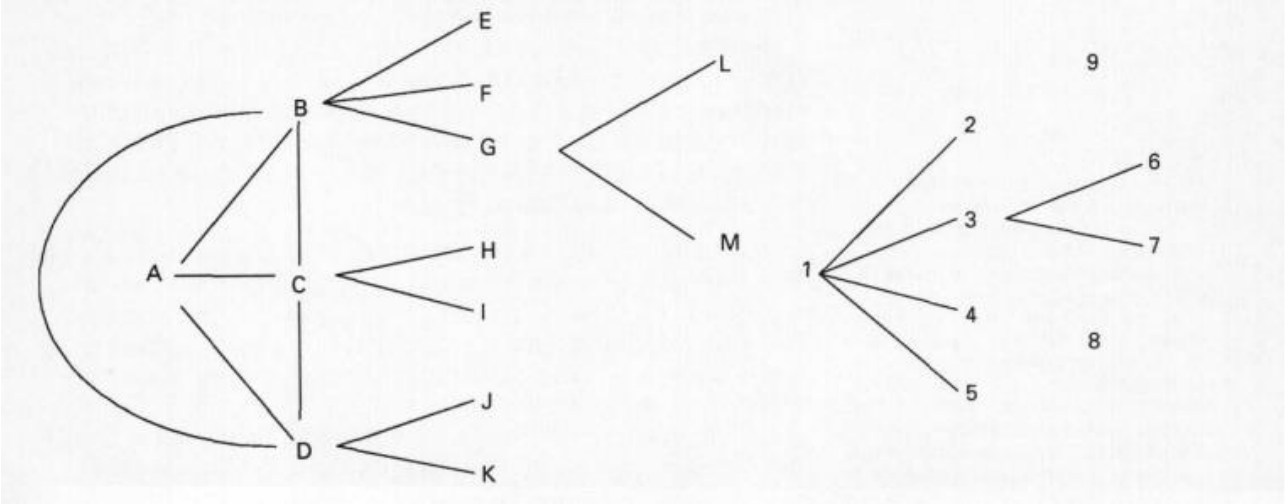
Even though the role of inter-firm networks in influencing firm behaviour and outcomes is clear (Ahuja, 2000), there is still uncertainty regarding the form of network structure that is more beneficial (Ahuja, 2000). On one hand, there is Coleman (1988) which contemplates closed and dense network as more advantageous, since they have advantages in terms of information access, by establishing trustful and reliable partnerships. Burt (1992b), on the other hand, considers brokerage opportunities created by open social structures as optimal. He argues that even if in closed networks knowledge sharing occurs, after some time this information will become redundant. As a result, those network which are sparsely connected, can constitute an information flow rich and efficient, and, at the same time, take advantage of the brokerage opportunities existing in the network (Burt, 1992b).

5.5 Direct ties, indirect ties, and the strength of the relationships

Ahuja (2000) identified three aspects of the firm network that are most significant, especially when it comes to exploit benefits such as resource sharing and knowledge spill-overs:

- the number of direct ties;
- the number of indirect ties;
- the degree to which a firm's partners are linked to each other, which refers to the type of relationship between the actors in the network (strong or weak), and which highlights the presence of *structural holes* in the network.

Figure 5.5.1 Direct ties and indirect ties in networks



Source: Collaboration networks, structural holes, and innovation: a longitudinal study (Ahuja, 2000: 428).

The figure above illustrates the three dimensions that can be found in a network, by looking from the perspective of Firm A and Firm 1. Firm A has three direct ties (B, C, D) and nine indirect ties (from E to M). Since the indirect ties can be reached through Firms' A direct partner's, from Firm's A perspective the network is closed, and structural holes are absent. Indeed, in the first situation, all firms are tied together. Firm 1, instead, has more direct ties (four direct ties: from Firm 2 to 5), but fewer indirect ties (tow indirect ties: Firm 6 and 7), which can be reached through a common partner: Firm 3. In this case, however, partners are not connected each other (there are gaps between Firm 2, 3, 4 and 5). This creates an open network which is characterized by several structural holes.

Each of the dimension that we can identify in the network has an impact on firm's performance and carries specific benefits. According to Ahuja (2000), firm's direct ties can facilitate collaboration through the generation of complementary skills and economies of scale. Moreover, they have the potential to provide both resource sharing and knowledge spill-over benefits (Ahuja, 2000). An increase in the number of direct ties can also enhance the firm's ability to address complex problems (Ahuja, 2000; McFayden and Cannella, 2004).

Indirect ties, instead, can serve as a communication channel, which provides informational benefits coming from both the knowledge base held by the partner and the one held by partner's partners (Gulati and Gargiulo, 1999). Indirect ties can, therefore, provide access to knowledge and act as an information-gathering and information-screening device, thus "entailing coordination, close contact and mutual dependency" (Gulati and Singh, 1998).

Together with the type of collaboration (direct or indirect), another dimension of relational social capital refers to the strength of the relationship. According to Auster (1992), linkages can be:

- *sustained*, if the type of communication is frequent;
- *focused*, when the collaboration is based on a narrow range of issues;
- and *relatively intense*, in the situation in which both partners are incentivated to share valuable information (Ahuja, 2000: 430).

The degree of connectivity between actors in the network can be described in two ways: by looking at *strong ties* and *weak ties*. Both strong and weak ties can provide benefits, although of a different nature (Rowley et al., 2000). If strong ties are characterized by a strong sense of mutuality in the relationship, since they require a huge investment in terms of time and emotional intensity (Granovetter, 1973), weak ties indicate a more tenuous kind of relationship. Weak ties are said to benefit the relationships since they are channels for new sources of information, thus contributing to the creative process (Granovetter, 1973; Rowley et al., 2000). Strong ties, instead, can promote trust and reciprocity, and thus stimulate long-term relationships. Moreover, they can serve as a tool for the transfer of tacit knowledge and high quality information (Reagans and McEvily, 2003; Inkpen and Tsang, 2005).

5.6 Network embeddedness

Embeddedness refers to "the role of concrete personal relations and structures (or "networks") of such relations in generating trsut and discouraging malfeasance" (Granovetter, 1985: 490). The term embeddedness explores how the overall structure of relations have an influence on economic action and outcomes, and it refers to the overlapping of social and economic ties that can be found within and between organizations (Granovetter, 1992). Being embedded in a network results in a co-operative behaviour, which, eliminates the risk of being ostracized from the group (Williamson, 1975). Indeed, repeated interactions among the actors in the network, discourages efforts that seek only narrow advantages in a singular transaction. Together with frequency, embeddedness also considers reciprocity (Uzzi, 1996). According to Granovetter (1985), reciprocity "transforms a unilateral supply relationship into a bilateral one" (1985: 191), since a greater "mutual interest" can be enhanced when parties share a similar "destiny" (1985: 155).

Gulati and Gargiulo (1999) identified three main sources of *network embeddedness*[4],which defines the quality of ties between a focal firm and its transaction partners, including buyers, sellers and competitors (Noorderhaven et al., 2002):

- Relational embeddedness;

[4] According to Noorderhaven et al. (2002), an organization can be said to be strongly embedded when their relationships with suppliers and customers are recurring and characterized by trust, open communication and joint problem solving.

- Structural embeddedness;
- Positional embeddedness (Gulati and Gargiulo, 1999; Polidoro et al, 2011).

5.6.1 Relational embeddedness

When discussing relationships and networks, the level of relational embeddedness in a social context must be carefully analysed. Indeed, it has been observed to be crucial in creating or even finding opportunities (Burt 1992a; Jack and Anderson 2002). Relational embeddedness indicates the presence of direct ties between two firms, and captures the quality, depth and strength of such dyadic exchanges - the degree to which exchange parties consider one another's needs and goals (Granovetter, 1992). It strengthens mutual trust and it reduces the risk for the future dissolution of the partnership, since it allows for the exchange of information about the actor's capabilities (Kogut, 1989; Park and Ungson, 1997), and it is usually analysed through the development of alliances or inter-organizational relations (Noteboom, 2004).

The relationships between the actors involved in the exchange are characterized by elements such as "trust, confiding, and information sharing" (Jones et al., 1997: 922). These collaborations are developed through recurrent and repeated interactions, which become source of familiarity, since organizations learn each other goals, behaviours and needs (Jones and Lichtenstein, 2008) and have an influence on companies' decision to collaborate. Direct contacts, indeed, provide channels for both parties to learn about their competences and their level of reliability, which becomes the ground for future interactions (Jones and Lichtenstein, 2008). As a result, uncertainty can be reduced, since the record of those past collaborations are a source of trust development, which, in turn, facilitate coordination (Gulati and Gargiulo, 1999; Kenis and Oerlemans, 2008). All of this, opens the door for information and knowledge sharing, and communication flows between the actors involved (Jones and Lichtenstein, 2008).

According to Hansen (1999), in order to exploit know-how (a non-codified, tacit knowledge), a high degree of relational embeddedness is a crucial condition. Uzzi (1997) states that a high degree of relational embeddedness enhances a flow of knowledge and joint problem-solving between two actors, whereas a low degree of relational embeddedness causes problems in the flow of such non-codified or tacit knowledge between firms.

Indeed, the nature of the knowledge that must be transmitted, requires a deep relational level in terms of the firm's interaction. A high level of relational embeddedness is characterized by "informal contracts, mutual trust and wide and intensive cooperation and interaction" (Andersson et al., 2005: 5), and it characterizes a strong and deep relationship, which in turn allows to exploit the existent know-how.

5.6.2 Structural embeddedness

Organizations do not have relationships only with each other but also with the same third party. *Structural embeddedness* refers to extent to which indirect ties between parties are linked through a mutual third party (Kenis and Oerlemans, 2008). It describes the role that architecture of network relations has in explaining the behaviour of organizations (Jones et al, 1997). According to Granovetter (1992: 35), structural embeddedness provides "more efficient information spread about what members of the pair are doing, and thus better ability to shape that behaviour". Structural embeddedness represents a triadic relationship, rather than a dyadic one: it is the extent to which a "dyad's mutual contacts are connected to one another" (Granovetter, 1992: 35). The depth of structural embeddedness depends on several factors: the size of the network (the number of "nodes"); the density of the network (actual number of direct ties between nodes); the centrality of the network, and the stability of the structure – which refers to the rate of entry and exit of the nodes (Noteboom, 2004). According to Jones et al. (1997), instead, the structural features of the network include only the number of participants in the interaction and the likelihood of each participant to spread information about previous interaction.

The presence of a common partner between two firms increase the predisposition for an alliance or partnership, since it provides several advantages (Gulati, 1995; Gulati and Gargiulo, 1999). In such contexts, indeed, indirect channels are seen as facilitator of communication (Gulati and Gargiulo, 1999). Since participants interact with several actors, which move frequently among firms and professionals in the network, collaborations are increased. The mutual and reciprocal contacts among the actors in the network enhances the spread of information (Jones and Lichtenstein, 2008), and the diffusion of symbolic and cultural structures, which in turn shape the behaviour of organizations (Granovetter, 1992: 35). Indeed, a "convergence of expectations" is created, where the different parties involved can create a shared understanding and rules that allow them to co-operate, and thus facilitate collaboration (Jones et al., 1997: 930).

When collaboration is pursued, the network become denser, with an increasing presence of continuous but weak ties (Jones et al., 1997). This type of network is able to reduce uncertainty – in terms of transactions – and to nurture coordination (Jones and Lichtenstein, 2008). As a matter of fact, these networks generate a flow of information which is rich and efficient, and they help actors in the network in the choice of their most appropriate partners (Sydow, 2006). Simultaneously, structural embeddedness favours social monitoring, helping organizations to monitor and enforce collaborative behaviour (Coleman, 1988). The higher the level of structural embeddedness in the network, the more information about each player is widespread in the network, the more the limits on the actor's behaviour (Burt, 1992b). The fear of loss of reputation, indeed, reduces the likelihood

of opportunistic behaviour from common partners (Gulati and Gargiulo, 1999). In those networks, relationships come and go, and are developed based on the history of past transactions. Therefore, uncooperative behaviour, reported by a third party, significantly reduces the probability of future relationships. On the other hand, the "positive gossip" is able to generate and strengthen such relations (Burt and Knez, 1995).

5.6.3 Positional embeddedness

Finally, *positional embeddedness* refers to the level of centrality of an actor in a network, and its impact on the actor's behaviour (Polidoro et al., 2011). According to Provan et al (2007), the position in the network is defined as a function of the number of direct ties that the actor has with other organizations. Positional embeddedness can generate "informational" and "reputational benefits" to those organizations that are characterized by a higher level of centrality (Polidoro et al., 2011: 204). Organizations that are centrally positioned can access information more easily, and they can benefit mostly from the information received by its partners. First, central firms possess a larger web of relationships, skills, expertise and absorptive capacity, which foster information processing (Zollo, Reuer, and Singh, 2002). Second, the central position in the network is more likely to favour the collection and dissemination of information: information flows to central firms, which, in turn, can identify opportunities more easily with respect to those firms on the side-line. As a result, central firms can select the right partners, the ones that exhibit to possess reliable resources and a trustworthy behaviour (Ahuja, 2000; Gulati, 1995b). Thus, the higher the level of centrality of firms, the lower the informational constraints they face when searching for partners.

Together with the informational advantages, central firms can also benefit from enhancing trust between them and their collaborative partners (Gulati and Singh, 1998; Gulati et al., 2000). Indeed, when an initial stock of trust is provided, partners collaborate more effectively during the course of the alliance. As a consequence, central firm possess a higher number of informational benefits, which can improve the stability of the partnership that has been established. Moreover, the centrality in the network yields a more relevantreputation, which makes organizations appear as more attractive with respect with the ones in the periphery (Gulati and Gargiulo, 1999). Indeed, they are seen as more capable and respectable (Powell et al., 1996). However, centrally positioned actors generally choose to collaborate with organizations in the same central position. This, indeed, allows them to maintain their status, and avoid the risk of partnering with unknown actors (Chung, Singh, and Lee, 2000; Gulati and Gargiulo, 1999). On the other hand, peripheral firms are incentivized to collaborate with partners that are more central, since, in this way, they can enhance their reputation (Podolny, 1994), or they can increase the frequency of relationships with others, additional central

partners (Ahuja, Polidoro, and Mitchell, 2009). Clearly, this situation leads to the formation of asymmetric partnerships, since they wish to access to complementary resources (Ahuja, 2000; Gulati and Gargiulo, 1999), thus creating instability in the network.

The higher the number of collaborations that are initiated in a network, the more the ties that will be created among the organizations. Indeed, by establishing direct and indirect ties, through the means of relational, structural, and positional embeddedness, the density of the network will increase (Gulati and Gargiulo, 1999).

However, over embeddedness may create some problems too. Granovetter (1973) suggests that, if actors are not well integrated into the network, too much reliance on strong ties tends to esclude those players. Uzzi (1996) believes that too much embeddedness in the relational side – such as the presence of many strong ties and few weak ties - can cause the destruction of novel information from other parts of the industry. As a result, Jones et al. (1997) stated that the actors in the network must be connected not too loosely, not too tightly. Indeed, the optimal level of embeddedness in a network should be of an intermediate level. This will permit to avoid the dissolution of social relationships, and. at the same time, the unawareness of the receiver of the information.

5.7 Factors that influence the network formation

According to Provan and Kenis (2008: 240), there are several reasons that lead companies to join or form networks: they may need legitimacy, or they must address complex problems; they may want to attract and gain more resources, or to serve their clients more efficiently and/or more effectively. However, regardless the specific reason, network organizations are seeking to achieve something that "they cannot achieve independently" (Provan and Kenis, 2008: 240).

Researches have demonstrated that collaboration is easier when firms are characterized by **similar attributes** (Boschma, 2005). This is known as the *homophily theory*, which postulates that people tend to form ties and collaborate with others who share similar knowledge base, norms and value with others. Also geographical proximity and the belonging to the same business group or to the same social contexts, increases the probability of interactions (Balland, 2012).

Another factor that influences the likelihood of interactions can be found in the **individual characteristics of firms** (Cassiman and Veugelers, 2002).

In particular, the *size* and the *experience* of the firm may play a crucial role. For example, small firms are characterized by flexibility, whereas bigger firms may be interested in gaining access to financial resources. Clearly, when companies decide to establish relationships, it is due to their need of resources that they do not possess. Consequently, larger organisations may turn to smaller ones to respond rapidly to unexpected situations, while smaller firms might turn to larger

organisations to respond quickly to financial needs. The experience of the firm has also an important role in determining inter-firm collaborations. Experienced firms have accumulated over the years a larger knowledge base, making them attractive for potential collaborators and able to identify fruitful partnerships.

Besides the structural characteristics of the firms and their similar attributes, several elements may influence network formation. Glu¨ckler (2007) identified endogenous structural characteristics as having a strong impact on the development of network relationships: inter alia through *transitivity* (or *triadic closure*), and *preferential attachment*.

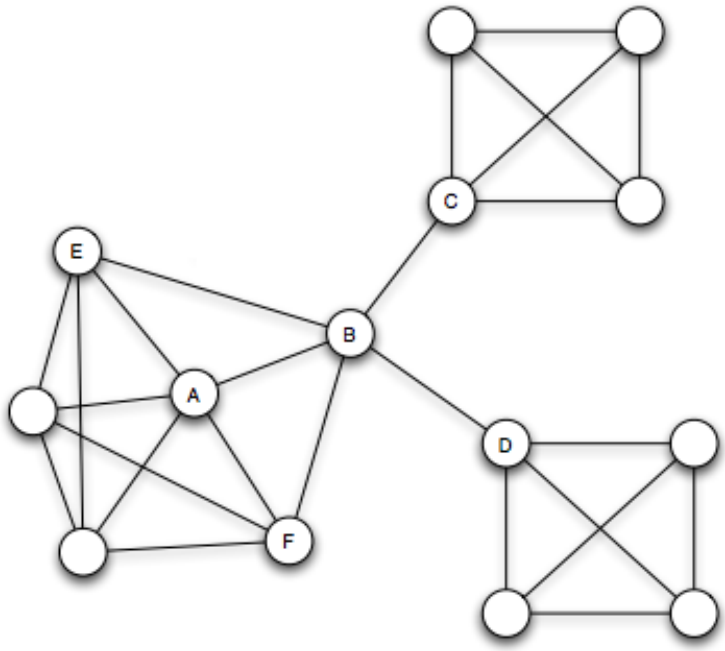
Transitivity describes the situation in which a network force leads two nodes, previously unconnected, to connect themselves through a common partner (Davis, 1970) and it is linked to structural embeddedness. The transitivity hypothesis states that some agents can be more reachable than the others due to their position in the network, since they represent a more effective route that can be used to connect potential nodes, therefore increasing the degree of structural embeddedness. Common partners play a crucial role in this situation, since they can provide information to both partners by reducing uncertainty about the reliability and the qualification of the potential partner (Uzzi, 1996).

Preferential attachment, instead, is linked to positional embeddedness: central actors are inevitably more attractive than others, and new nodes that enter the market are more likely to form ties with incumbents (Barabasi and Albert, 1999). Therefore, when it comes to connect with others, central partners are preferred, since they are considered as the most connected organizations in the network. Organizations with a huge pool of relationships are intended as more trustworthy and productive, being conceived as more attractive (Barabasi and Albert, 1999). Indeed, a firm's preferential attachment is usually measured in terms of the number of its previous partnerships (Balland and Boschma, 2013).

6. STRUCTURAL HOLES AND CLOSURE AS SOURCES OF SOCIAL CAPITAL

The analysis conducted so far focused on the structure that the network can possess, as well as the type and depth of the relationships that can be found in such structures. Further insight, however, must be gained by looking at the roles that the different nodes have in the networks as well. In social networks, the access to the *edges* (the connections) between different groups is not equally distributed: some nodes may be positioned at the centre of a single group, while others may be at the interface between multiple groups. The position a firm holds in a network results in different informational benefits, and has an impact on the accessibility of the resources in that particular structure.

Figure 6.1 Densely knit-groups and brokers in a social network



Source: Networks, crowds, and markets: reasoning about a highly connected world (Easley and Kleinberg, 2010: 65).

The figure above shows a graphical representation of two different situations, from node A's and B's perspective: node A is at the centre of a dense network of interactions, whereas node B is at the interface between several groups.

6.1 Closed networks as sources of social capital

Node A is characterized by a high level of embeddedness in its network[5], composed of a tightly-knit group of relations. According to Coleman (1990), those networks' structures are the most beneficial for the exploitation of social capital. The key idea is that networks that are characterized by a heavy level of connections, where everyone is in a relationship with everybody, provide two important benefits. Firstly, they make access to a more valuable type of information, since it has been demonstrated that the quality of knowledge flows deteriorates as they move into a chain of intermediaries (Baker and Iyer, 1992). Direct connections, therefore, lead to an improvement of communication skills, and thus knowledge sharing. Secondly, closure reduces the risk associated with a lack of trust of the partners in the network, making collaboration more easy since it is governed by the presence of sanctions (Coleman, 1990). In a closed network, actors known each other well as they interact on a daily basis. The redundant type of relationships that are developed in such contexts, allows for an effective monitoring of the norms that regulate the exchange, and thus facilitates the enforcement of sanctions. As a result, uncertainty about the exchange is reduced, and robust collective actions are engendered. If an efficient and valuable collaboration must be pursued, and reputation must be built, a high level of trustworthiness is required among the members of the group. Such benefits are the outcome of a continuous and redundant type of communication, and therefore cannot flourish in open structures.

6.2 Structural holes as sources of social capital

Organizations, however, are not seen only in terms of the tight connections existing within their social structure, but also in terms of the "holes" where connections have failed to form. A fundamental dimension in social network research is linked with the degree of connectivity (or the lack of it) between a firm's partners (Burt, 1992a). The gaps that may exist in a knowledge flow are known as *structural holes* (Burt, 1992a). The network positions at the end of multiple bridges (such as node B in the figure above) can span the "empty spaces" between two sets of nodes that are not communicating. Burt (2000: 5) defines structural holes as "buffers, like an insulator in an electric circuit", since the people on the different sides of those holes circulate in different flows of information. In those contexts, some individuals, called *brokers*, have access to information flows that come by either side of the hole, and act as "conductors" in the same electric circuit. Indeed, their

[5] According to Easley and Kleinberg (2010), the level of embeddedness in a network is shown by the number of common neighbours that the two endpoints have. For example, A and B have an embeddedness of two, since they have two neighbours in common: E and F.

presence implies "access to mutually unconnected partners and, consequently, to many distinct information flows" (Ahuja, 2000: 431).

According to Easley and Kleinberg (2010), structural holes can provide three distinct kind of benefits. First, those firms that are in bridging positions can access information flows coming from multiple sources, which comes from parts of the network that are not interacting. Being involved in a widely dispersed network provides greater access to resources: if bridging ties would not exist, the relationships would lack of those inter-personal connection that can provide innovative and new information streams. Brokers in open structures usually invest their energy efficiently by reaching out different groups rather than focusing their attention in the same one (Easley and Kleinberg, 2010). This is why structural holes in the network provide non-redundant sources of information, which are *additive* rather than *overlapping* (Burt, 2000).

Second, the position at the end of a local bridge makes the firm act as an "amplifier for creativity and innovation": "innovations often arise from the unexpected synthesis of multiple ideas, each of them on their own perhaps well-known, but well-known in distinct and unrelated bodies of expertise" (Easley and Kleinberg, 2010: 67). Brokers in the networks have access not only to combined information flows coming from the two groups, but also to the opportunity of combining this sources in new ways. This results in the generation of a more efficient information flow, and in the improvement of a firm's ability to synthesize ideas arising in different parts of the network.

Third, brokers in the network act as "gatekeepers". Indeed, they link groups of people (two or more), which are not usually interacting. In their position, on one hand, they have the opportunity to "broke" the information flow between people; and, on the other hand, to control projects and/or activities that bring together actors coming from opposite sides of the hole. In figure 6.1, node B can regulate the access to the information flow coming from the first group of both C and D. At the same time, it can control the way in which groups learn about the information received, and how such knowledge is exploited. This results in a huge source of power for the firm in the bridging position.

Structural holes are defined as a correlate of organizational learning, and they are usually linked with organization's absorptive capacity. Cohen and Levinthal (1990: 128) defined absorptive capacity as "the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends". Structural holes, indeed, can act as a conduit for information flows if, and only if, people appreciate the advantages made possible by those network structures, and implicitly seek out opportunities to realize them. As a result, the network is shaped and formed by the link information decisions that are made by individuals who understand their added value.

A huge stream of literature agrees on the fact that organizations that are able to bridge structural holes in the network are more productive and creative, and able to learn faster (Podolny,

2001; McEvily and Marcus, 2002; Pollock et al., 2003). Indeed, according to Burt (2000), those actors that are embedded in networks rich in structural holes are in the position of bringing knowledge in a faster way, and to more people, since they can monitor information more effectively. Moreover, in those contexts, individuals are more responsive, and resilient: they can invest their time and energy in different solutions. As a result, networks characterized by a huge number of local bridges result in a cohesive and co-ordinated actions of the organizations (Granovetter, 1973).

6.2.1 Brokerage

According to Burt (2004), brokerage can create value in four levels. The first level can be identified in the sharing of information about interest and difficulties that both parts possess. This type of communication, indeed, reduces conflicts and confusion that may arise from misunderstandings (Burt, 2004). The second level refers to the transferring of best practices. The familiarity that brokers have with both actors or group allows them to identify and recognize the valuable know-how and to transfer it to the other group in a meaningful way. The third level of brokerage is the ability to "draw analogies" between groups or actors that are seen as irrelevant, by understanding that the impact of others' beliefs and behaviours may have on their own activities (Burt, 2004). The fourth level of brokerage, instead, describes the synthesis skills: those who know well the activities of both actors are more likely to see beliefs or behaviours that combine the elements for both groups (Burt, 2004). These four dimension of information arbitrage demonstrate how brokerage can be critical to learning and creativity (Burt, 2004). People in brokerage position can access diverse networks, by spanning structural holes, and they can reach diverse information sources and multiple interpretations. Clearly, this gives them a competitive advantage in identifying early opportunities emerging in the market. Indeed, ideas may generate in a variety of sources, but, at some point, the know-how from one group to another must be combined, and thus spread (Geroski and Mazzuccato, 2002; Menon and Pfeffer, 2003). According to Burt (2004: 389), brokerage is the "engine for productive change": "people who have relations that span the structural holes between groups have a vision advantage in detecting and developing good ideas".

6.3 Closure vs. structural holes

As already mentioned, there is still "a fundamental disagreement about the network structure responsible for [social capital's] benefit" (Gargiulo and Benassi, 2000: 184). Burt (2000) stated that social capital can be seen as tension between closure and brokerage. Indeed, the choice between those structures is characterized by a significant trade-off between the advantages that they can provide. On one hand, densely, interconnected networks favour the propagation of trust, but inhibit the inflow

of "fresh insights" (Ahuja, 2000: 452). On the other and, networks with a strong presence of structural holes, provide innovative informational benefits, but hinder the development of trust (Ahuja, 200). However, according to Ahuja (2000: 452), "under the appropriate circumstances, exclusive, cohesive, and non-redundant connections can all constitute social capital". It is widely acknowledged in literature that there is no a simple, universal answer when it comes to identify the most beneficial structure of a network. Indeed, it is dependent on the benefits sought. For example, a network characterized by redundant and interlocking ties is more suitable for those organizations who wants to foster trust and cooperation (Granovetter, 1985; Coleman, 1990). Indeed, closed networks are better suited when overcoming opportunism is a key essential to success (Ahuja, 2000). If firms' primary business requires speedy access to diverse sources of information, in order to gain competitive advantages in the market, then an open structure with many, non-overlapping ties is most appropriate (Burt, 1992 a,b; Ahuja, 2000).

7. METHODOLOGY: SOCIAL NETWORK ANALYSIS (SNA)

The social network analysis (usually known as SNA) is defined as a set of analytical tools used to study social relations and analyse network data. SNA is used in a variety of areas, including social and behavioural sciences, but also in fields such as marketing and/or economics. According to Wasserman and Faust (1994), the SNA does not focus exclusively on the features that the actors in the network may possess, but it studies also the structure and the nature of the relationships existing between those entities. The relational data in place investigate the inter-connections between the actors, or nodes, in the network (individuals, groups, or organizations), and focuses on analysing their set of ties. The type of study, thus, spans from exploring the flow and exchange of resources, information and ideas, to the ways in which innovation diffuses in those organizations. Wasserman and Faust (1994: 4) identified four main principles that build up the social network analysis:

- Actors, and their actions, are viewed as interdependent, rather than independent, autonomous units;
- The relational ties (the relationships between the actors in the network) are channels for the transfer (or flow) or resources, which can be material or non-material;
- The structure of the environment can provide opportunities or limits to the individual actions;
- The network models conceptualize the social, economic, political structure as long-lasting patterns of relations among the actors/The generation of long lasting ties and networks.

In social network analysis, the focal point of analysis is an entity which consists of a collection of individuals and the ties which exist between them, rather than focusing on the individual itself. Indeed, this type of study does not study the attributes that the actor possesses: it pays attention to the structure of the network and the relationships emerging from it, and vice versa.

7.1 Social network analysis: methods

In social network studies, several approaches can be used to analyse the network. On one hand, there is the *whole* network method, which focuses on the entire network, and collects data on each tie and node that build up the network, looking at the network from the outside. On the other hand, there is the *personal* or *egocentric* network method, which looks at the network from the inside, and it deals with the acquisition of data on one node (called *ego*), and its ties (known as *alters*).

The *full network method* gives a complete picture of the relations existing in a population, rather than a sample. It deals with taking a census of ties in a population of actors. Indeed, this method requires the collection of information about every ties of every actor in the network. If this type of

approach allows for a very powerful description and analysis of social structures, at the same time it is extremely expensive and difficult to pursue. Indeed, it brings a huge amount of information, even if it difficult to execute (Hanneman and Riddle, 2005). Obtaining data from every member of the population is extremely challenging, and it requires a wide time-frame of analysis. When the focus of the study rests uniquely on the strong ties, such difficulties may be overcome if the groups investigated are smaller, since respondents can easily identify a limited number of individuals with whom they interact. However, when weak ties enter into the equation, the task becomes almost impossible, especially when dealing with larger groups. It is also true that people, groups or organizations have a limited number of ties due to the limited amount of resources in terms of time, energy and cognitive capacity they have. Therefore, the web of relationships maintained by the actors in the network can not be too much extended (even when it comes to study both strong and weak ties).

The *snowball method*, instead, focuses the analysis on a focal actor or a set of actor. It is a name generator tool, where each of the respondent is asked to name some or all of their connections to other actors in the network. The same is asked to all the actors emerging from the previous analysis, and the process continues until no new actors are identified, or until the researcher itself decides to stop, due to a limited amount of resources, or because the new actors do not have relevance in the field of study. This method is particularly suitable for the study of special populations, especially where small sub-sets of population are mixed with other sub-sets (Hanneman and Riddle, 2005). In this method, it is not difficult to achieve closure. In fact, the limited number of strong ties that most actors may mention, and the tendency of those ties to be redundant, makes it easier for researchers to find the right boundaries. Instead, problems may arise when it comes to choice and select the starting point for the study. Indeed, if the initial node is situated in thee wrong places, then there is the risk of missing a set of actors who are not connected with the focal node, but which are still interacting with other members of the network. Besides those limits, the snowball method is able to capture the "elite network" in a more effective and efficient way (Hanneman and Riddle, 2005).

The *ego-centric methods* can be divided into two main groups: the ego-centric networks with alter connections, and the ones with ego only. The *ego-centric networks with alter connections* is usually adopted when it is not possible to track down the networks through the full method or the snowball one. In this approach, the starting points are still the focal nodes, as it happens in the snowball method, but the subsequent steps are different. After the selection of the focal nodes – the egos to start with – the alters must be identified. Subsequently, it is important to determine whether the nodes selected in the first place (the alters) are connected to one another (Hanneman and Riddle, 2005). This can be done in two ways: by contacting directly the nodes that have been discovered

while performing the analysis; by asking the ego to report the type of interactions existing among those alters. The effectiveness of this type of approach can be found in its ability to collect relational data deriving from larger populations, and to provide a good and reliable picture of the networks in which the respondents are embedded (Hanneman and Riddle, 2005). It allows to figure out the number of connections that can be found in the network, and the extent to which the nodes belong to close-knit groups. In addition, these data enable the understanding of the opportunities and constraints that those focal nodes have as a result of their level of embeddedness in the network. However, the ego-centered approach with alter connections does not provide information useful for the analysis of the network as a whole, as it happens for the census or snowball approaches. The data coming from this type of network study, indeed, refer to samples of local or specific areas (Hanneman and Riddle, 2005) rather than whole populations. Therefore, if the presence of reciprocal ties and the density in the network can be estimated with this approach, the same cannot be said for what concerns other structural properties existing in the network.

The *ego-centric method with ego only*, instead, focuses on a single individual or focal node. In those context, the information collected concerns the inter-relationships between the focal node and the actors of the network, resulting in a detailed description of the local network and neighbourhood of the ego. However, this approach gives an incomplete picture of the network structure, even if it allows for a better understanding of the extent to which networks can affect individuals (Hanneman and Riddle, 2005). Indeed, the data obtained, which refers to the ego's connections to alters, does not provide information about the interaction existing among those alters. As a result, the nature of the network structure cannot be defined with certainty.

In this study, the approach used will be the ego-centric approach, since taking an "internal" perspective seems more relevant for the purpose at hand.

Ego-centric networks allow for the analysis of the immediate connections existing between the focal node and the actors in the network. Consequently, it provides information about both the patterns of interaction established in the network, and the role that individuals possess in those contexts.

Even though this approach yields a lower amount of information with respect to the whole network methods, it conveys the possibility of generalizing from the results emerged from the study of the sample to the larger population.

7.2 Quantitative vs. qualitative social network analysis

During the last decades, the literature has been discussing on whether a *quantitative* or *qualitative* type of analysis is the most appropriate research method when it comes to analyse network structures. Indeed, networks are intended as both structures and processes, and this does not permit a

simple categorization as either a qualitative or quantitative phenomena: together with an understanding of the network patterns, researchers must focus also on the way in which people perceive the network, and the content and meaning of its ties.

Quantitative approaches include tools such as name-generator surveys or maps (Carrington et al., 2005) for the collection of the relational data that measures networks and determines whether ties are either present or absent, and/or their frequency of contact – the strength of the relationship. Subsequently, the relational data are quantified through the use of an "adjacency matrix", which requires the recording of ties as present or absent – respectively one or zero (Edwards, 2010). If the path is from actor A to actor B, but not necessarily vice versa, ties are thus defined as *directed;* if they are reciprocal, ties are then *undirected*. Hence, the quantitative approach, one side of the spectrum provides a systematic measure of analysis, while on the other side, is characterized by a simplification of the social relations in mere numerical data. The quantitative approach has made an important contribution to the study of social networks. Indeed, it allows for a better visualization and description of the social network when a large number of relationships must be investigated in the network. Indeed, software like UCINET facilitates the storage of a huge quantity of data, and yields quicker and easier procedures. According to Hanneman and Riddle (2005), mapping data in matrices enables researchers to identify patterns of interaction that they would have not emerged in qualitative contexts. Moreover, the structure of those relationships can be explored not only by looking from an individual perspective – as it happens when analysing networks from a qualitative point of view - but from the perspective of all the actors existing in the network at the same time (Scott, 2000).

Despite the current dominance of the quantitative approach among the literature, the qualitative social network analysis has been widely adopted (Heath et al., 2009). As mentioned above, the social network analysis (SNA) allows for the collection of data on: a *whole network,* where the population is at the centre of the analysis rather than a sample; a *personal* (or *ego-network*), where the analysis is carried on by recording the ties of a focal node together with the ties between the alters. *Qualitative approaches* tend to focus upon "personal networks", rather than "census networks". As a result, issues arise when it comes to define the boundaries of the social networks studied. Several studies attempted to solve the existing problem of the lack of data (Kossinets, 2006).

Qualitative approaches used in order to understand social network dynamics include several tools, also known as "ethnographic methods" of analysis. These include:

- in-depth interviews (Pahl and Spencer, 2004), or "walking interviews" - during which the respondents are interviewed while they walk around their local area, (Emmel and Clark, 2009);
- participant observation (Kawulich, 2005);

- diaries of communicative practices (Seed, 1990);
- participatory visual mapping techniques (Emmel, 2008), which explore the interactions between the actors in the network. This method is more interested in examining what Emmel and Clark (2009: 2) defined as the "lived experience" of social networks. Indeed, the qualitative method explores what "passes" through the network (Crow, 2004), and the embedding of network ties (Clark, 2007).

In the following study, a qualitative approach has been taken, in order to answer to the research questions through responses that are descriptive and exploratory (Hussey & Hussey, 1997). Thus, a qualitative type of approach is required, as the study is guided by description and explanation rather than quantification (Bryman and Bell, 2007). Moreover, the qualitative approach conveys a narrative and observational type of data, which can be situated in a wider contextual finding, and enables a deeper awareness of the context in which the ego operates. Qualitative social network analysis allows to explore the network studied and to derive the inter-connections that exist between the participants in this network. Even if qualitative approaches have gained a dominant position in recent years, the value of qualitative approaches can not be underestimated. Indeed, it takes a different perspective which goes deeper into the network structure, and has the ability to catch the most hidden informational benefits. Researches such as Heath et al. (2009) and Jack (2010), have expressed their preference toward a qualitative approach to SNA, since they recognized that "network structure is not the whole story…and for that reason we need to supplement methods of formal network analysis with qualitative observations about what is "going on" within a network" (Crossley, 2010: 21).

7.3 Background of the study

The focus of this research is on the art industry, and in particular, in the analysis of the network of the Foundation Giorgio e Isa de Chirico. The reasons behind this choice are several. First, the market structure that characterizes the art industry (and the creative industries in general), makes the study of the network extremely interesting. In such context, few large companies dominate the scene, and a huge number of small companies makes up the rest of the market (Antcliff et al. 2007). Consequently, an analysis of the patterns of interactions between the players in the industry will allow a better understanding of the processes that take place in that specific environment.

Second, collaboration activities are a significant feature of this industry. Indeed, the small size of the firms in the industry, and their project-oriented structure, requires a high level of co-operation. Moreover, the unique characteristics of cultural goods, which, especially in the art industry, are intended as symbolic goods, require a specific focus on the interaction between the firms. Indeed,

"the value of art is a function of social consensus, where the opinion of art world insiders has greater weight" (Schönfeld and Reinstaller 2005: 2). Therefore, creative and cultural firms operate within networks of individuals, groups and organizations that are extremely complex. As such, those firms are intrinsically social organizations (Woodman, et al., 1993). They are characterized by overlapping inter-personal relationships (Silverside, 2001; Shaw, 2006), which can span within and across organizational boundaries (Simonton, 1994). Knowledge sharing is, therefore, a fundamental ingredient, as is the cumulativeness of the process of creativity.

A specific actor of the network has been selected as a sample for the study: the Foundation Giorgio e Isa de Chirico. Conducting an analysis of the network through the focal lens of the Foundation Giorgio e Isa de Chirico permits the gathering of meaningful information due to its wide number of activities, and its strategic location[6]. Moreover, according to Siggelkow (2007: 20), "it is often desirable to choose a particular organisation precisely because it is very special in the sense of allowing one to gain certain insights that other organizations would not be able to provide". Especially in the creative industries, where the operational network is multifaceted, and where diverse stakeholders are involved, the choice of a single organization can provide extensive benefits, by giving deeper theoretical insights with respect to the comparison across different cases (Dyer and Wilkins, 1991).

The following study has been conducted on a specific location: Rome. The reason behind this choice is two-fold. First of all, due to the time constraints that characterize this project, focusing on a single area of analysis allows for a better, and deeper, description and evaluation of the issues explored. Secondly, as mentioned above, creative industries are characterized by a heterogeneous distribution across the territory. Indeed, they tend to be concentrated in specific places since they need to collaborate and co-operate often, and the physical proximity allows for a continuous flow of information. Even if some argued that the spatial dimension is neither a sufficient nor a necessary condition for the transmission of knowledge between the actors of the network, it has been empirically demonstrated that it actually facilitates the establishment of a more "ideological" type of closeness. Thus, investigating the relationships existing between the ego of the network and its alters, which are located in the same geographical context, provides two benefits: it permits to understand whether spatial proximity is really relevant in terms of ties formation and maintenance, and it permits to develop a clearer description of the network under investigation.

[6] Indeed, the case Foundation is located in the geographical and business heart of Rome, which allows it to be engaged in a complete set of local and national, arts-related networks.

7.4 Data collection

The data collected for this study have been gathered through both primary and secondary sources of data. Indeed, different collection methods have been combined, in order to access to a wider pool of information. Information gained from telephone interviews, and participant observation with the respondents, have been complemented with the ones resulting from internal sources, such as the organizations' web pages. The nature of this industry, and of the associations and entities that are part of the network, requires a clear understanding of the activities that are carried on in such contexts. Thus, to get a better insight on the type and level of relationships that are developed and nurtured in those contexts, it is important to recognize the core business of the companies that are interacting. Thus, the primary – or at least the most important – source of information comes from telephone interviews with the participants, and their observation, since they permit to obtain a more accurate and clear picture, coming directly from the respondents' point of view (Ghauri and Gronhaug, 2005).

In this study, the participant observation has been the method used for the analysis of the focal node - the Foundation Giorgio e Isa de Chirico - and the observation has been conducted on a daily basis, for two months. The data needed for the study of the alters, instead, have been collected through structured phone interviews, that have been carried on after having explored the network of activities and relationships that the Foundation possesses.

7.4.1 Participant observation

Participant observation enables researchers to learn and understand the activities carried out by the people under investigation by studying them in their natural. Observation refers to "the systematic description of events, behaviours, and artefacts in the social setting chosen for study" (Marshall and Rossman, 1989: 79). It is "the process of learning through exposure to or involvement in the day-to-day or routine activities of participants in the researcher setting" (Schensul et al., 1999: 91). According to Dewalt and Dewalt (2002), participant observation is crucial when it comes to establish the guidelines for the sample choice and for the structuring of the interviews.

Observation methods provide several benefits. First, they allow for an understanding of the ways in which participants communicate with each other, and of the amount of time invested in each activity performed (Schmuck, 1997). Through the observation of the daily activities carried on the context analysed, it is possible to determine who interacts with whom, and how such interactions are perceived by the respondents by checking the feelings or non-verbal expressions. Moreover, participant observations permit to identify potential bias and incorrectness which may derive from the information provided by the ones interviewed (Marshall and Rossman, 1995). According to Dewalt and Dewalt (2002: 92), "the goal for design of research using participant observation as a

method is to develop a holistic understanding of the phenomena under study that is as objective and accurate as possible given the limitations of the method". Participant observation has the potential to increase the validity of the study, allowing for a better perception of the context under study (Bernard, 1994). It provides guidance when it comes to construct the theoretical background and generate and test hypothesis (Dewalt and Dewalt, 2002), but it must be developed together with additional strategies – such as interviewing – in order to be effective.

According to Schensul et. al (1999), participant observation must be the beginning step, especially in ethnographic studies. Indeed, such tool allows for the identification and of the informational sources from which to draw upon. Moreover, not only does it facilitate the research process – since the researcher become known to the respondents – but it also describes the parameters used in the organization and prioritization of the work, thus demonstrating how people interact with each other. When dealing with cultural studies, participant observation is considered as an extremely useful tool (Bernard, 1994). This is because it makes possible to collect different types of data, and it helps the researcher to develop more relevant questions. Indeed, being physically where the tasks are performed and the activities carried on, gives to the researcher a better understanding of what is happening in the field of the study. As a result, it allows for the familiarization with the community, which in turn favours the involvement on the most relevant jobs.

A major limitation of the observation methods is the bias of the researcher. Indeed, the researchers' point of view tends to affect the analysis and the interpretation of the data collected. A major advantage is, instead, the possibility to collect information that are rich and detailed (DeMunck and Sobo, 1998), while facilitating the interpretation and development of relevant research questions (Dewalt and Dewalt, 2002: 8).

7.4.2 Telephone interviews

Qualitative methods such as interviews allow researchers to obtain data that would not be obtained from purely quantitative methods. Indeed, they provide a deeper understanding of the social phenomena in place in specific contexts that can not be otherwise investigated with different tools. Therefore, they are particularly appropriate when sensitive topics must be explored, and where a little knowledge of the environment under study already existed. In the field of qualitative research, few studies usually use telephone interviews, since face-to-face interviews are the most preferred tools (Opdenakker, 2007; Sweet, 2002). Even though less employed, telephone interviews can be considered undoubtedly a "versatile" data collection tool (Carr and Worth, 2001: 521). Several researchers, indeed, view qualitative telephone data as tools of high quality, due to their ability to provide rich and detailed data (Sturges and Hanrahan, 2004; Sweet, 2002). Those tools furnish several

benefits: a decrease of the research costs; and the possibility to access also subjects geographically distant (Sweet, 2002; Sturges and Hanrahan, 2004). Moreover, respondents can remain in "their own turf", and this allows for more anonymity and privacy (Sweet, 2002; Sturges and Hanrahan, 2004), and thus it leads to a decrease of social pressure. The information disclosed in those types of interviews is more free, due to the respondents' familiarity with the environment, even if this may increase the probability of distraction of the participants by the activities carried on in those environments (Opdenaker, 2007).

According to Fitzgerald and Dopson (2009), based on their structural degree, interview questions can be: structured, semi-structured or unstructured. *Structured interviews* are usually intended as verbally administered questionnaires, where a list of questions previously determined are asked with little or no variation. This type of interviews is extremely quick and easy to develop, and are usually managed when a clarification of certain specific questions is required. However, their nature does not make them apt for deeper investigations, since they only allow for a limited number of participant responses. As a result, structured interviews produce a type of data that is more standardized and focused. *Unstructured interviews* are defined as of "gently guided conversation" (Fitzgerald and Dopson, 2009: 478) as they start with a simple opening question, and then they continue based on the answer received from the primary responses. They are usually more time-consuming, and are more difficult to manage, since they lack of predetermined question, and provide little guidance on the topic to cover. However, they are well-designed for those researches that require a significant level of depth or where a different perspective is needed on an already known topic. Finally, *semi-structured interviews* consist of questionnaires where the areas to be explored are specified and defined, but still there is a higher level of freedom for the structure of the questions. This approach is extremely flexible, and can lead to the discovery of subject areas that have been underestimate. Semi-structured interviews balance the standardized and focused characteristics that are typical of the structured interviews, together with the level of deepness that characterizes the unstructured ones. As a result, they are indicated when the main goal of the research in place is to elaborate information that are important for the respondents, but which cannot be extrapolated from specific questions.

The data required for this study concern the identification of the players in the art industry with which the alters of the Foundation's network collaborate and co-operates, in order to describe the network and identify the presence of structural holes or brokerage opportunities. Thus, concise and effective responses were needed, directed toward the heart of the subject areas. As a result, structured telephone interviews have been considered as the more suitable tool for the purpose of the following research, since they require an investigation structure of shorter duration with respect to

the face-to-face, or unstructured interviews (Sturges and Hanrahan, 2004; Sweet, 2002). Moreover, differently from the usual ego-network studies, which tend to rely upon the information given by the ego also regarding the alters' activities, this research has been done by interviewing the alters as well. Indeed, the analysis was not limited on the information of the alters received by the Foundation, but narrative data have been collected directly from the parties involved.

8. THE FOUNDATION GIORGIO E ISA DE CHIRICO

The Foundation Giorgio e Isa de Chirico has been founded in 1986 and it has been operating in the art industry for 30 years. The Foundation is located in Rome, in Piazza di Spagna 31, where the House-museum is situated. The set of activities carried on by the Foundation span different areas.

First, it endeavours to further knowledge on the artist, Giorgio de Chirico, through the management and maintenance of the House-museum, and through the endorsement and the offering of its patronage to exhibitions and conferences. The management of the House-museum entails the preservation and the exhibition of the artist's artworks, and it is characterized by daily interactions with individuals, cultural associations, or schools, that book guided tour to visit the collection preserved by the Foundation. The patterns of collaboration, when it comes to deal with this type of public, are usually limited, since those situations imply exclusively the provision of a service (the guided tour), which the people in question have paid for directly. In those cases, indeed, the relationship leaves no room for the development of a long-term, established partnership since the interactions are among single individuals (the visitors and the guided tour of the House-museum) are involved in a "one-shot" connection, which terminates at the same moment in which the service has been provided. Moreover, since the aim of this study is to investigate the network structure in the art industry, and in particular in the Roman territory, the relationships between the Foundation and private individuals are not considered as a relevant subject for the analysis at hand. When exploring the inter-organizational relations associated with the House-museum activities, interesting co-operation patterns may emerge if looking at the Foundation's collaboration with museums, or private galleries, in the organization of worldwide exhibitions. Indeed, together with the Expertise service, which will be discussed later, the organization of worldwide exhibitions is one of the core businesses of the Foundation Giorgio e Isa de Chirico. Usually, those partnerships tend to be of a short duration, since they are undertaken prior to the implementation and development of the exhibition, and they are ended as soon as the exhibition closes. However, even if the collaboration has ended, subsequently, the two actors of the network remain in open communication, and can also share useful information for the future.

A second activity, performed by the Foundation, is concerned with the curbing of the phenomenon of forgery that is associated to de Chirico's production, through the work carried out by the Expertise service. The Expertise service is intended to collect and register those artworks that are submitted to the Committee to assess their authenticity. This branch of the business involves interactions with individuals, Auction Houses and private galleries whose purpose is to estimate the legitimacy of the art piece they possess. As already mentioned, this is one of the most important, and

most profitable activities realized by the Foundation. The relationships established with Auction Houses and private galleries are characterized by recurrent and repeated communications, whereas, as it happens above, the patterns of collaboration between private individuals and the Foundation are limited and, therefore, not taken into consideration.

Finally, a third stream of activities, brought off by the Foundation, refers to the collection and registration of a wide range of documentary and photographic material about the Maestro's production, and to the creation and publication of periodicals that are distributed worldwide, which entails the collaboration of universities, museums, libraries, and art academies.

8.1 Data visualization

In order to get a better insight on the structure of the network, visualization tools have been used. They allow to communicate effectively the information that has been collected, and they permit to discover unseen relationships, or to get additional data on previous information. The visual network maps are usually called "sociograms", and can be produced either electronically (through the utilization of specific software), or manually. Usually, when the network is analysed with qualitative methods, its visualisation is developed during the data collection stage. Sociograms are used in several fields such as psychology, communication, or on-line business, and they play a crucial role since they denote the structural properties of a network. They are the best and clearest way to represent the structure of a relations, or some relations, which connect different individuals in a specific environment.

The immediate visualization of the ego and the alters, and their patterns of interaction in the network, provides an interface through which it is possible to find and understand the structure in which those players are embedded. Through the graph theory, indeed, it is possible to measure different properties that the network may possess. For example, aspects such as its *density*, *centrality*, or the *brokerage* or *closure* existing within it. As already stated, those structural measures can provide indications of how ideas and resources flow through the networks, depending on their characteristics (if they are dense or sparse, centralise or decentralised, open or closed). Moreover, they allow for the analysis of opportunities and difficulties that the actors in the network are experiencing, and which depend on the position they possess.

The nodes that can be found in the sociogram can be modified in their size, colour and shape in order to represent different properties such as *centrality*, *betweenness* or *closeness*. The actors of the network become the nodes in the graph, and the ties between the actors are then the lines that connect the different nodes in the graph. Ties can represent any kind of relationship type: if a person

trusts, communicates with, or gets information from another, and their presence indicates that a relationship really exists. The absence of them, instead, indicate that a relationship does not exist.

In the following study, ties represent continuous and repeated interactions, which are developed among the actors in the network as a means for exchanging information and knowledge – directly or indirectly. Indeed, such type of relationships are those that stimulate the development and diffusion of social capital, since they are seen as channels for the transfer or flow of resources, either material or non-material (Adler and Kwon, 2002).

8.2 The Foundation's alters

As it emerged from the above description, the Foundation is involved in distinct set of activities, which require different skills, and thus inter-organizational type of interactions. In order to understand the structure of the network in which the Foundation is embedded, and thus identify the presence (or absence) of structural holes, a clear classification and description of the actors with which it interacts is needed. From the interviews and the observation of the participants, it appeared that the Foundation interacts with a huge number of organizations during its daily activities. Thus, it is embedded in a complex relational environment where enterprises, institutions and associations does vary, and they may come from both the public and private sector.

However, some of these organizations are not considered in the analysis due to several reasons. First of all, the Foundation Giorgio e Isa de Chirico collaborates with diverse organizations of national and international breadth, such as Christie's, Sotheby's, Bonhams, but also Art Curial, Skinner and Hampel Fine Art Auctions. Yet, if some of them (Christie's, Sotheby's and Bonhams) have their own administrative office in Italy, and in particular in Rome; the others are not present in the Italian territory. As a result, since the following study has been conducted on a specific location - the city of Rome - those organizations outside the geographical area under investigation, have not been taken into consideration[7]. Secondly, those entities, associations or firms which work with the Foundation, but whose core business does not concern the art industry, have been considered as not relevant for the study and thus have been excluded. In particular, they comprehend:

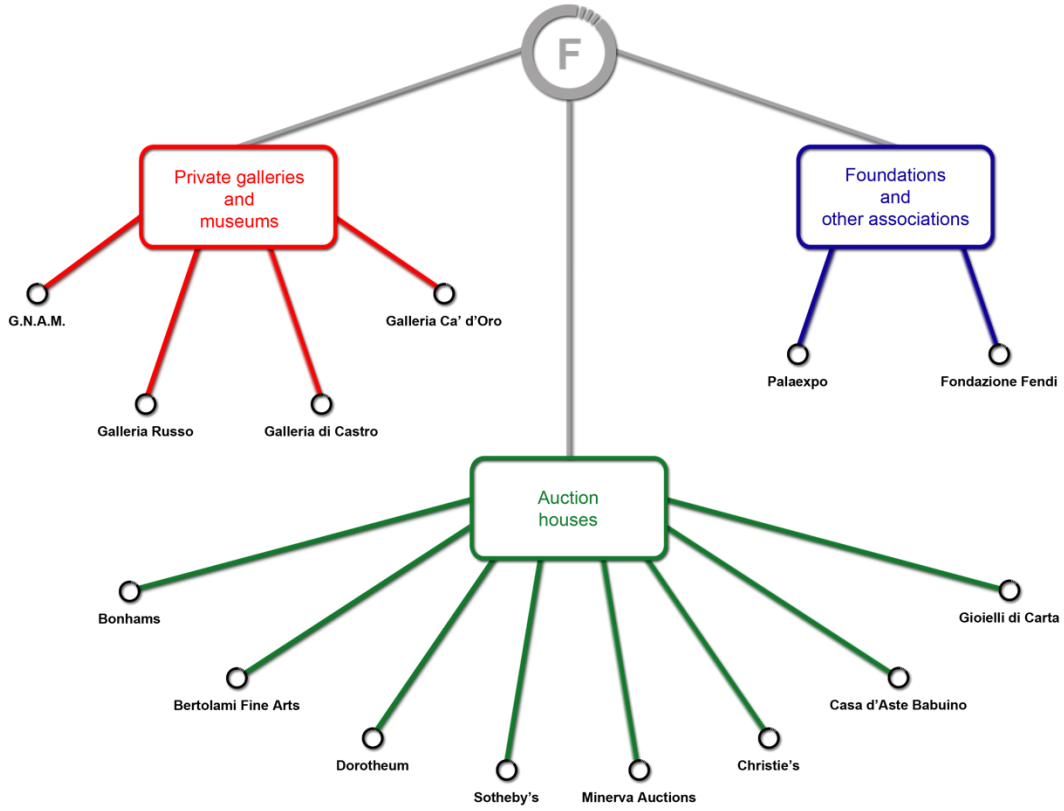
- libraries, art academies and universities, which deal with the Foundation when it comes to realize and publish the periodicals;
- private or public foundations and museums, which are involved in the organization of exhibitions both nationally and internationally;

[7] The same is true for those private foundations or museums with which the Foundation co-operates, that are located in national or international cities. For example, the *Fondazione Molise Cultura*, located in Campobasso, or the *PERA Museum of Istanbul*. They collaborated with the Foundation for the organization of the last two exhibitions.

- organizations which provide services to the Foundation, and which allow for the performing of its daily tasks and activities.

On the other hand, the players with which the Foundation collaborates and interacts, and which are the centre of our study, can be divided into three main categories: Auction Houses, private galleries and public museums, and other cultural association and foundations.

Figure 8.2.1 Relationships in the art industry from the Foundation's point of view



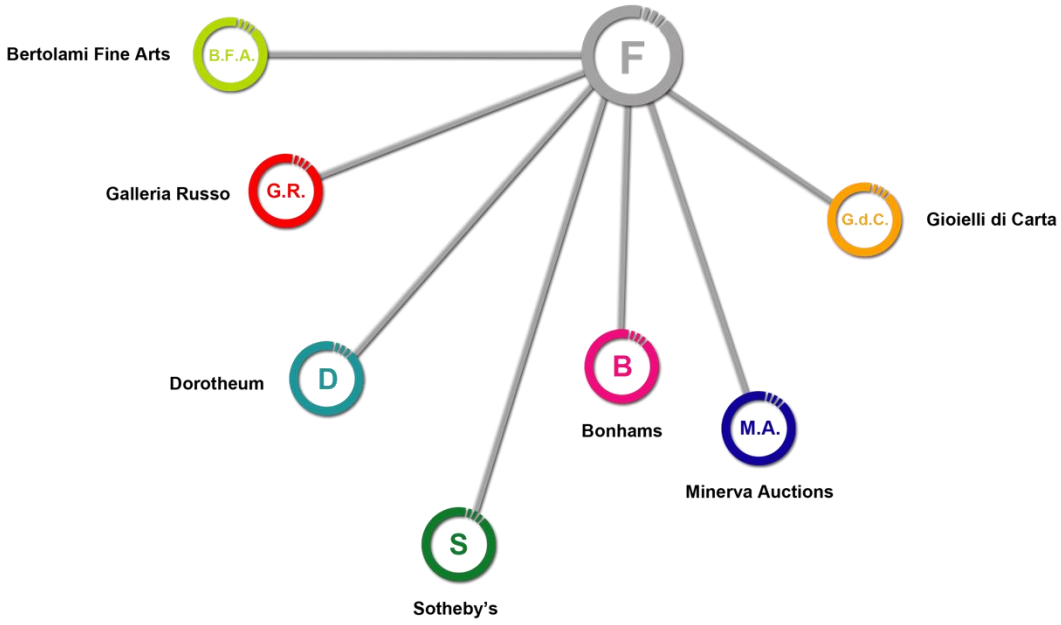
The first category refers to public museums such as the GNAM (Galleria Nazionale d'Arte Moderna), or Roman private galleries, including Galleria Russo, Galleria Di Castro, Galleria Ca' D'oro. The second category encompasses Auction Houses of international breadth such as Sotheby's and Christie's (which are the leaders in the markets in which they operate), Dorotheum, Bertolami Fine Arts – ACR Auctions, Bonhams; together with Roman houses such as Minerva Auctions, Gioielli di Carta and Babuino – Casa d'Aste. Finally, the third category consists of private foundations as Fondazione Fendi, or companies like PalaExpo.

Unfortunately, from the aforementioned group of entities interacting with the Foundation, only some of them have been carefully analysed in the following study. Even if they all operate in

the Roman art industry, and collaborate with the focal node, it was not possible to collect primary data concerning them. Indeed, due to privacy reasons, they have not been keen to provide the requested information. Those include Auction Houses such as Christie's and Casa d'Aste – Babuino, and private galleries as Galleria di Castro and Galleria Cà d'Oro, together with Fondazione Fendi. Instead, for what concerns the company Palaexpo and the GNAM (Galleria Nazionale d'Arte Moderna), the reasons behind their exclusion from the subsequent analysis are different. In fact, the massive network of relationships of international breath that such companies possess, does not allow for a consistent and cohesive network analysis, and thus has not been explored in detail.

Before going deeper into the analysis of the relationships existing between the ego and the alter select for the study, a description of those companies, who collaborate with the Foundation, and, of what they do in their daily life, is required. In this way, the peculiarities of the relationships in place will be understood easily.

Figure 8.2.2 The Foundation's alters



The Foundation Giorgio e Isa de Chirico interacts with six Auction Houses, and one private gallery (Galleria Russo). The figure above represents the players of the industry, which are investigated in the following study.

- **Bertolami Fine Arts – ACR Auctions**

Bertolami Fine Arts – ACR Auctions is a well-known Roman auction house, with three offices in Europe: Rome, Monaco and London. It performs a different set of activities, which makes it more

than a simple Auction Houses. It works in the fields of art, archaeology, and numismatics, and it also deals with the organization and creation of exhibitions, and cultural events. Its press offices develop communication campaigns for the art industry, and it is also seen as a cultural salon where to discuss about the new emerging topics of the artistic world.

- **Dorotheum**

Dorotheum is one of the Auction Houses, that are leader in Europe, and one of the oldest and largest auctioneers of fine art and antiques. It has branches operating worldwide, with offices in Munich, Düsseldorf, Brussels, Prague, London and Milan. Together with the Auction Houses activities, Dorotheum collaborates with international specialists and collectors for the publication of myART MAGAZINE, a periodical issued twice a year, which goes deeper in the art's world. Dorotheum is strongly embedded into the international scenes, and it possesses an excellent network of contacts worldwide. It collaborates regularly with numerous museums, and it is involved in a wide range of projects and cultural events. It supports charitable organizations on a regular basis, and it is partner with two important hotel chains in Germany. Moreover, Dorotheum is member of a global partnership (International Auctioneers), made of seven leading Auction Houses (such as Artcurial, Bukowskis, Koller, Lempertz. Porro&C. and Swann), which become an influential cooperative whose aim is to provide access to the most interesting auction venues for their customers worldwide.

- **Sotheby's**

Sotheby's is a multinational corporation, and, together with Christie's and Bonhams, one of the world's largest auctioneers of fine arts. It operates in more than 40 countries, being located in 90 different cities all over the globe. In 1977, Sotheby's become a public corporation, and, in 1988, it has been listed on the New-York Stock Exchange. The company's activities stem from private sales, to assistance with libraries and museums for the valuations of the artworks, together with the management of legal and tax services connected to the items possessed by the company.

- **Bonhams**

Bonhams is one of the world's oldest and largest Auction Houses in the world. Together with Sotheby's and Christie's, Bonhams is one of the most respected and trusted brands, and one of the market leaders in the industry. Its presence is worldwide, with salesrooms located in New York, San Francisco, Hong Kong, and London. In the last decade, it undertook several strategic moves, which made it even more relevant in the art market. In 2000, the house merged with a specialist auctioneer, Brooks, with whom it created a powerful platform for the auction market. Subsequently, Bonhams

expanded its market, through the merger with Phillips Son & Neale, which brings together two important Georgian Auction Houses in London. Moreover, in 2002, Butterfields, a well-know firm of auctioneers on the West Coast of the USA joined the group.

- **Minerva Auctions**

Minerva Auctions is the first Auction House in Rome. Differently from other organizations in the Italian panorama, Minerva Auctions relies more on the evaluation of its internal specialists, rather than consulting external players in the industry. Indeed, through its selected team of recognized experts, it offers valuations for both single art pieces and private collections. Moreover, it assists customers with tailor made dealings, and it estimates the artworks even for insurance and the handling and transportation for the exhibition.

- **Gioielli di Carta – Casa di Vendite Bonino**

Gioielli di Carta – Casa di Vendite Bonino is an Auction House specialized in drawings and historical documents. It collaborates with fine art investors such as Previdart, or with societies such as Rechburg e Betzkoj Associati SpA, and it assists several museums and associations in the art industry. Its activities include: free evaluations and estimation of private artworks; direct selling of works of art of particular interest; art consulting for those who want to build and enhance their collection; and, most importantly, it identifies the reference experts available worldwide, which can assess the authenticity of the artwork.

- **Galleria Russo**

Galleria Russo was born in 1898, in Rome, as an antique gallery. After several years of activity, it has turned into one of the most prestigious galleries in the Italian Modern Art market. In particular, its location in Piazza di Spagna, has become a reference point for the whole Italian artistic market. Indeed, it has established privileged relationships with some of the most important painters of the 20th century as Giorgio de Chirico, with whom they had an exclusive contract for more than twenty years. After 1960, the gallery opened various seats all over Italy: in Salsomaggiore, Albano Terme and Milano Marittima, in order to focus more on the Contemporary Art market. During its years of activity, the gallery collaborated with some of the most important foundations and organizations in the art industry, such as Archivi Guttuso, and Fondazione Afro, and Archivio Sironi among the others.

According to Barringer and Harrison (2000: 387), networks can be defined as "constellations of businesses that organize through the establishment of social, rather than legally binding, contracts".

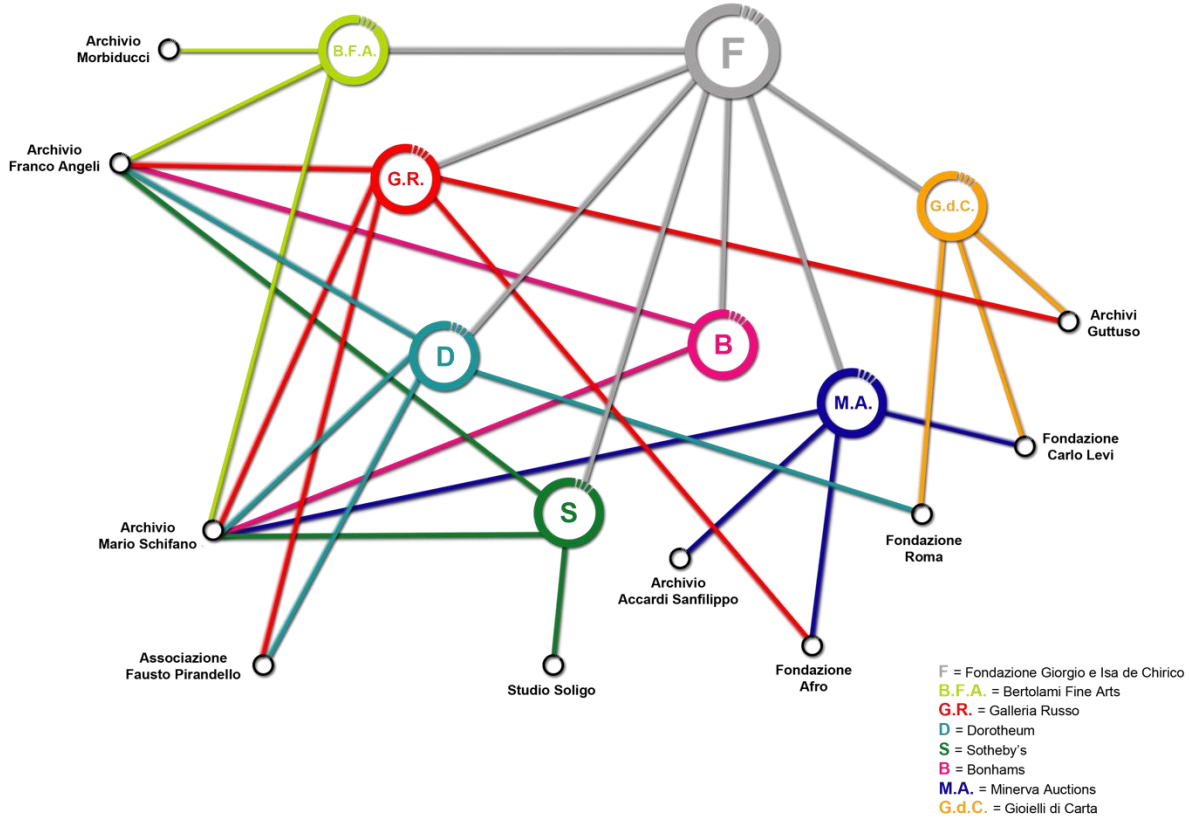
This view, usually intends networks as having the form of a wheel or a hub, where the focal node lies at the centre. Its location, indeed, is crucial in order to observe and coordinate the interconnections which emerge from those who are collaborating in the network. The type of connections existing among the Foundation of these alters are characterized by specific patterns of cooperation, which are based on social contracts, rather than mere market ones. When auction houses, or galleries, interact with the Foundation, the relation in place is regulated by legally binding contracts. Their working together, in fact, is usually driven by the need to carry out a working activity, which is part of the core business of both firms. However, despite the contractual type of the relationship, which usually characterizes the exchange, the collaboration goes further. The Foundation and its alters, indeed, interact frequently, and not necessarily for business matters. Thus, the one-shot transaction becomes the starting point for the development of a solid relation, made of continuous communications and inter-change of information, which in turn generates knowledge spill-over benefits.

8.3 The network map of the Foundation Giorgio e Isa de Chirico

The graph below describes the network of relationships existing between the Foundation Giorgio e Isa de Chirico, its alters, and the alters of its alters. The position of the Foundation, and the size of the circle, can be misleading. Even if located at the centre of the graph, it does not represent its level of centrality in the network, in terms of the number of connections it has with others. It indicates, rather, the pivotal role that the Foundation has, as the focal node of the network through which the analysis has been conducted.

The size of the circles of the alters, instead, represents the type of relationships they have with the Foundation (either direct or indirect). The bigger circles refer to the direct connections that the Foundation have, whereas the smaller ones represent the indirect connection of the Foundation, which can be reached through the means of its direct ties. Moreover, colours have been used in order to allow for an immediate identification of both the interactions existing in the network, and the bearers of such relationships. Finally, lines have been used to describe the connections among the members of the network. Even if they are not characterized by the presence of the arrows, the type of relationships represented is reciprocal, implying equal status between the players involved – no hierarchies can thus be found.

Figure 8.3.1 The network map of the Foundation Giorgio e Isa de Chirico



By looking at the figure above, it is possible to understand the structure of the network and the type of its interactions. From the network visualization, it appears that the network under investigation is characterized by a strong presence of structural holes. As already mentioned, structural holes indicate the degree of connectivity between a firm's partners, and they describe the gaps that may exist in knowledge flows. Indeed, what it emerges here is that the direct ties of the Foundation, those organizations that communicate and interact with it, are not communicating each other, thus creating an "empty space" between several sets of node. Even if some of those ties may have a common partner – beside the Foundation itself –, the relationships that exist between the actors of this network are of a non – redundant type. Due to the the absence of connection between the direct ties of the Foundation, the network is open, and it is not characterized by densely tight knit of relationships. Thus, the Foundation is at the interface between smaller sub-groups, and it acts as a broker, or bridge: its direct ties may access the information coming from the other ties only through the Foundation itself. As a result, the position held by the Foundation allows it to get access to a huge stream of information. Indeed, the exposure to these diverse knowledge flows has the potential to spot the opportunities available in the network, and to regulate the knowledge that is being diffused among the actors. Structural holes, indeed, can be used as means for the identification of advantages, which stem from the development of new and innovative ideas.

Even if the Foundation's alters are not directly connected, they occupy a similar position in the structure. The same is true for the Foundation and the alters of its alters, which are, however, indirectly communicating. As a result, they share similar interests which are usually linked to the type of location they hold in the network. This is known as *structural similarity,* and it is conditioned on the level of visibility: its effect, indeed, depends on the fact that the actors involved know each other existence, and that they occupy a similar position.

Besides the structure of network, and the presence of structural holes in it, the social network analysis measures the activities that are performed in such contexts, through the concept of degrees: the number of direct connections that a node has. The actual number of ties between the nodes indicates the *density* of the network. The figure above shows that the Foundation Giorgio e Isa de Chirico has seven direct connections. Such interactions can provide several benefits: they have the potential to facilitate collaboration, and to provide both resource sharing and knowledge spill-over. Moreover, they can also generate complementary skills, which are developed as a result of their co-operation. Their collaboration is usually focused, thus based on a narrow range of issues which are linked with the activities that underpin the exchange. The number of indirect ties in the network represented above, instead, is higher. Each of the alters has at least two direct connections, which become indirect connections from the Foundation's point of view. Even if those nodes are not directly interacting, there is the likelihood that those ties communicate each other through their indirect connections. Indeed, the random relationships that exist between groups of people, who appear unconnected, can be just a few relationships apart. As a result, the Foundation has eleven indirect ties, which can be reached through its seven direct partners. Galleria Russo connects the Foundation with four different organizations: Archivio Franco Angeli, Archivio Mario Schifano, Archivio Fausto Pirandello, Archivi Guttuso and Fondazione Afro. The other alters, instead, on one hand send back the connection toward relationships already existing – as Sotheby's, Dorotheum, and Bonhams do – ; on the other hand, they provide at least one more relation, whose actors differ from the ones previously established – as it happens with Bertolami Fine Arts, Minerva Auctions and Gioielli di Carta. Those ties serve as communication channels rather than collaborative linkages, and they provide more informational benefits with respect to the direct ties. Indeed, indirect ties are information-gathering and information-screening devices, and provide access to knowledge.

The extent to which those ties are linked through the same third party is measured by the level of *structural embeddedness*, that can be found in the network. A high level of structural embeddedness can provide two distinct kind of benefits: it allows for the collection of a comprehensive information type, where the knowledge coming from both the direct and indirect ties is diffused through the network; and it reduces the opportunistic behaviour, since the fear of a loss of

reputation is high. In this network, indirect ties are mostly archives and foundations who carry out the same type of activities performed by the Foundation. The presence of such connections, thus, enables the collection of information about similar, but still different, type of organizations which are embedded in the same network of relationships. The mutual and reciprocal contacts that are developed among the actors of this network, indeed, allow for the creation of a cohesive and shared understanding of the working style and atmosphere, which in turn shapes the organizational behaviour.

An important measure in the social network analysis is linked to the *positional embeddedness* of a firm in the network, which usually describes the position that is occupied by the actor in question. Positional embeddedness usually measures the degree to which the actors in the network occupy a central position in the structure, and it investigates the extent to which such position may affect their behaviour. Among the centrality measures, **degree centrality** is one of the most relevant, and it usually derived by the number of direct ties that are connected to a node: the higher the number of direct connections, the higher the degree of centrality. Indeed, a huge number of relationships indicate that the actor in question plays an important role in the network. A high level of centrality in the network also indicates that those nodes are best connected, and thus are the one that have the most influence in the network. Central actors, or nodes, not only do they have more influence in their network, but they also have access to different stream of information, and they are usually intended as more trustworthy and reliable. If, on the other hand, the relationships in the network are few, and the level of centrality is low, it means that the actor is not involved in the most important activities performed in the network. In the following study, the Foundation has the highest degree centrality, since it is directly connected with seven individuals. On the other hand, Bonhams is the least connected in the network, since it interacts with only three actors: the Foundation itself, Archivio Franco Angeli, and Archivio Mario Schifano. Galleria Russo and Minerva Auctions are two of the most active nodes in the network, since they possess, respectively, five and four direct connections. If the network is analysed from the alters' point of view, then, Archivio Mario Schifano and Archivio Franco Angeli are those with the highest number of direct connections (correspondingly six and five). At the same time, Archivio Morbiducci, Archivio Accardi Sanfilippo e Studio Soligo are the least active ones, since they have only one direct connection.

Even if it is widely acknowledged that "the more the connections, the better", the number of direct ties in a network, and thus their degree of centrality, is not the only important measure to consider when analysing the structure of the network. Indeed, a significant aspect concerns where those connections may lead. Being connected to a more central individual is more beneficial than

being connected to a peripheral actor[8]. Thus, the measure of **eigenvector centrality** considers both the number of connections an actor has (its degree centrality), and the degree of the alters to which it is connected. For example, Bertolami Fine Arts, Sotheby's and Gioelli di Carta, all of them have a degree centrality of three. However, Bertolami Fine Arts and Sotheby's are interacting with two of the most important actors in the network: Archivio Mario Schifano and Archivio Franco Angeli. On the contrary, Gioielli di Carta, has three alters with a degree centrality of two (Fondazione Roma, Fondazione Carlo Levi, Archivi Guttuso). As a result, the eigenvector centrality for Bertolami Fine Arts and Sotheby's is greater than the one of Gioielli di Carta.

The measure of **closeness centrality**, instead, measures the proximity of the actor (or the node) to all the other actors and nodes that can be found in the network. It describes the distance which separates the nodes in the network, and it indicates how many steps would an actor take to reach the others, and thus diffuse information. Even if some of the actors have a huge number of connections, it may happen that others, with a lower number of connections, can access all the nodes in the network in a quicker way than anyone else, through their direct and indirect connections. Indeed, they may have the shortest paths to all others, and thus the potential to monitor and address the information flow in the network. The closeness centrality measures the average shortest distance between the vertex in the network, thus: the shorter the route (or path) need to reach everyone in the network, the higher its level. From the graph above, it emerged that is the Foundation itself that has the highest level of closeness centrality in the network. Indeed, it can reach all the others in the network with the lowest number of steps. Due to its strategic connections, it is possible to think that Galleria Russo has the most preferred location for the diffusion of information in an easy and immediate way. However, even if it is connected with the most "popular" players in the network, it cannot reach all others in the network through one or two steps, as the Foundation Giorgio e Isa de Chirico does. For example, if Galleria Russo must reach Studio Soligo, it has to first arrive at Sotheby's through Archivio Mario Schifano, who in turn diffuses the information to Studio Soligo. This route requires three steps before reaching the actor concerned. On the other hand, the Foundation can reach Studio Soligo through its direct interaction with Sotheby's, in a shorter path (with a distance of two). Thus, the Foundation is the the actor in the network with the highest level of closeness centrality: it is in a critical location for spreading information through the network. Indeed, it can access the nodes in the network in easier way, having a greater visibility in the network with respect

[8] The peripheral nodes that can be found in the graphs of the following study, are such since they demonstrated to have a low level of centrality for the network under investigation. However, those type of nodes are usually connected to networks that have not been mapped. As a result, even if they are considered as of little significance for the analysis at hand, they may be relevant in other situations.

to the activities carried out in it. The Foundation, in fact, has the shortest path to all the others, since it is closer to everyone else. Thus, it allows for a faster communication with less distortion.

Another measure of centrality is known as **betweenness centrality**. It indicates where the node sits between one or more groups of actors of the network. In particular, it describes the presence or absence of "bridges" – those nodes which have a unique and strategic position – which allow them to connect otherwise unconnected actors. Bridges have a crucial role in such contexts since, once they are removed, as a result, some actors are then excluded from the network. For example, Galleria Russo, Dorotheum, and Gioielli di Carta have a betweenness centrality of zero: their removal would not alter the connection existing between the focal node of the network and its indirect ties. It means that their presence in the network cannot be ruled out, if one of the aforementioned connections is missing. These actors, in fact, interact with multiple direct ties of the Foundation, and, if one of those is going to leave the network, they would still remain, being connected with the others. On the contrary, if the collaboration with actors such as Minerva Auctions, Bertolami Fine Arts, and Sotheby's fails, Archivio Accardi Sanfilippo, Archivio Morbiducci and Studio Solingo will be no more part of the network since they would be excluded from it. The latters are thus known as *pendants*. They are in an unstable situation in which they are constantly at risk of being ostracized from the network, since they are part of it thanks to the presence of a single link of connection. Therefore, their relationships inside the network are labile: if the person in question should leave, they would be cut out from it. Thus, the aforementioned Auction Houses hold a powerful position: they are the only actors who can have access to a stream of information and knowledge which can be diffused if, and only if, their presence in the network is guaranteed.

The distinction between direct or indirect ties, which permits the identification of the benefits and limits that characterize such connections, does not, however, captures the strength of the exchange. Indeed, the presence of direct or indirect ties describes the type of path which connects the ego with its alters, rather than the quality of the relationship itself. Thus, together with the connections existing among the actors in the network (who is connected with whom), it is important to consider the strength and the direction of the relationships investigated (whether they are strong or weak, one-way or reciprocal), in order to describe the degree of connectivity that the network possess. On one hand, *strong ties* concern those relationships that are characterized by frequent interactions and feelings of closeness, and they require a huge investment in terms of resources, time and energy, for their maintenance. On the other hand, instead, *weak ties* can be of a higher number since they do not require a strong effort to be maintained. Weak ties are usually considered as critical to innovation, since it is more likely that organizations or individuals can get access to a new stream of information, that stronger ties do not possess – the information pool to which they have access is, indeed, the same.

Especially in business settings, a good balance between weak or strong ties is needed, in order to avoid to have a limited access to fresh, valuable information.

Relational embeddedness indicates the depth of the dyadic exchanges existing between the actors in the network. The depth of the relationship describes the degree to which exchange parties consider one another's needs and goals. A high level of relational embeddedness is characterized by recurrent and repeated interactions, which become a source of familiarity and increase the level of trust among the actors, thus resulting in a higher level of reliability. This in turn, reduces uncertainty, by facilitating coordination, and it becomes the ground for future interactions. A high degree of relational embeddeness is thus crucial for detecting and exploiting opportunities which refer to a type of knowledge that is tacit (know-how). Indeed, know-how refers to the accumulated skills and expertise in specific activities, which is usually difficult to codify and transfer in a direct way. Thus, a deep relational level is required in order to transmit such "non-codified" knowledge.

In the following study, the collaborations that the Foundation initiate with its direct ties can be of varying intensity, due to several reasons. From the interviews, it emerged that the type of communication between the Foundation and those Auction Houses, which are embedded in the Roman territory, is different from the one between the focal node and other Houses of a more international breath. Indeed, even if companies such as Bonhams, Dorotheum, Sotheby's or Christie's are widely involved in the activities and initiatives that are carried out in the city under investigation, their collaborations tend to be limited to those situations in which their alters' skills (and resources) are required. Otherwise, the relationships with those Auction Houses, and galleries, which operate mostly in Rome (such as Minerva Auctions, Bertolami Fine Arts, Gioielli di Carta and Galleria Russo) are constituted by a rich and efficient flow of information, since their interactions take place in the same geographical context, where the players of the industry are well-know, and continuous updates are required to keep up with the news.

9. DISCUSSION AND CONCLUSION

This study examined the type of network structure that characterized the art industry in Rome, and it explored whether there was the presence, or not, of structural holes in the collaboration patterns developed in such contexts, by investigating the Foundation Giorgio e Isa de Chirico. The ego-centric network analysis performed has made it possible to identify the main features possessed by the network under investigation, such as its density, and its the level of embeddedness, together with measures of degree centrality, eigenvector, closeness and betweenness centrality.

The cooperation patterns developed in such contexts resulted to be of the type "one-to-many", where some of the alters of the ego have established relationships with several players of the industry. Cliques can be identified, formed by different players, who are not working together. However, some of the small sub-networks resulting from those cliques are someway – directly or indirectly – interacting. Thus, some actors in the network act as bonding elements between the other players in the industry, who are involved in the network of collaborations. They have the potential to bridge among the others, and thus obtain the most powerful type of information. The structure emerging is, therefore, open, and rich in structural holes, with some actors at the service of everyone and yet others not even communicating. The Foundation acts as an informational broker, since it is in the position to move knowledge to more people. It can reach all the members of the network with the lowest number of steps, being able to communicate in a more efficient way. It operates as a boundary spanner, since its interactions goes beyond the communication between its local, immediate cluster. Its role as a gatekeeper makes it able to control and broke the information spreading in the network. Moreover, its strategic location allows it to combine different type of knowledge and ideas, which may derive from various places. In addition, the high level of degree centrality that the Foundation has, demonstrated how well-connected it is, and how influential it can be in the network.

The result of this study confirmed what a huge stream of literature have already claimed: creativity requires speediness, and speediness requires flexibility. Those values, therefore, necessitate of a network structure which can span the informational gaps, due to the need of being responsive and able to shift network time and energy from one solution to another.

Collaboration is yet a prominent feature of the creative and cultural industries. Thus, as a result, one may argue that the most beneficial structure should be a densely connected network, which favours the propagation of trust, and in turn, collaboration dynamics. Indeed, the most beneficial structure is the one in line with the goals to be pursued. Then, how is it possible that, in such a co-operative type of environment, an open structure emerged? Because co-operation is just the mean, through which justify the end. Inter-firm collaborations are developed in order to gain competitive advantages in this type of industries. Superior performance can be achieved if it is possible to get

speedy access to diverse sources of information, in order to identify the opportunities arising in the market, and exploit them. If such preferential access can be favoured by the establishment of a relationship with another actor in the industry, then so be it. Therefore, co-operative behaviour is still crucial and absolutely relevant, but it does not necessarily represent the benefit sought by the firms. Interactions may be recurrent and repeated, but they can also be limited to the performance of a specific activity or to the realization of a determinate event – as may happen due to the project-oriented structure of those industries. The presence of structural holes in the study demonstrates that there is opportunity for brokerage. However, in order to exploited, brokerage requires a high level of absorptive capacity. Thus, would the Foundation be able to recognize the value of such external information and take advantage of it? Would it be a *tertius gaudens,* or a *tertius iungens*?

9. 1 Limitations of the study and further research

There are several limitations in this study. First of all, one of the issue encountered, concerns the access to available and reliable data. Due to the nature of the research – which deals with the exploration of the relationships existing among the players in the network – the gathering of data has been extremely challenging. Indeed, when respondents are asked about the network in which they are embedded, they tend to be reluctant in yielding the information required. Especially some of the most important Auction Houses such as Christie's, are subjected to specific confidentiality agreements which does not allow for the disclosure of any type of data, even if it does not relate to the client's sensible information. As argued by Heath et al. (2009), those alters are part of what is known as a "shadow network", which is made of those ties who are important for the ego, but could not get first hand data about it. In those situation, the problem has been eluded by asking to the ego and the alters some information about the player in question, or by gathering information and data directly from the organizations' website, in order to address the inquiry with a certain level of specificity. However, the possibility of collecting exclusively secondary data does not allow for the inclusion of such organizations in the network mapping.

Moreover, the network under investigation is limited to the ego and its alter, and it focuses on inter-organizational relationships of first-grade. Indeed, information regarding the alters of the alters are missing, due to the time constraint and resource limitations characterizing the analysis. Even if a smaller sample of data is still suitable for conducting qualitative researches, investigating relationships of second-grade would lead to the identification of a wide range of organizations and entities that build the network. Identifying more players in the same geographical context, may lead to the development of a road map, which describes the entire environment in more detail. In addition,

a comparison with another type of association in the same industry can be pursued, in order to identify the similarities and differences existing, and thus draw some valuable advices and recommendations.

Along with the expansion of the sample under investigation, a widening of the methodology used may be beneficial as well. A mixed-method can be employed, including both qualitative and quantitative tools. For the following study, the qualitative approach has been absolutely legitimate, due to the small sample size analysed, and its ability to disclose and produce a specific type of data that were most relevant for the purpose at hand. However, if the number of the actors in the network increases, the inclusion of a quantitative method of analysis is not only preferable, but it is also necessary, in order to allow a more comprehensive research.

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INTER-ORGANIZATIONAL NETWORKS IN THE CULTURAL AND CREATIVE INDUSTRIES: A SOCIAL NETWORK ANALYSIS OF THE FOUNDATION GIORGIO E ISA DE CHIRICO.

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THEORETICAL BACKGROUND

Social relations have been identified as beneficial for individuals and organizations in several ways. They can facilitate coordination and cooperation (Anderson and Jack, 2002), thus resulting in a valuable spread of best practices and innovation in the network (Batt, 2008). The cross-pollination of ideas coming from different domains is one of the major characteristic of the creative industries and it can be nurtured by the relationships built in the network (the ties of the network), which are considered as conductors for social capital. Social relationships are thus a precious resource in the company, and they have an impact on the firm's performance as well. It is, therefore, unrealistic to analyse and study inter-organizational collaborations, and the exchange and sharing of resources, if the social environment in which those exchanges take place is not considered: organizations and individuals, in fact, make decisions without ignoring the social context in which they are embedded.

As a consequence, the network, or social network analysis, emerged as a framework of analysis, and it is based on the idea that relationships among interacting units are essential in generating value for the actors. This theory conceives society as made of an overlapping network of social relationships, between the nodes in the network, which can connect individuals, groups and organizations. According to this view, actors and their actions are "interdependent rather than independent, autonomous players" (Abraham et al., 2010: 27). The unit of analysis, therefore, is no more the individual itself, but rather "an entity consisting of a collection of individuals and the linkages that exist between them" (Wasserman and Faust, 1994).

Networks can be characterized by few or many actors, with one or more relationships among each other. However, in order to analyse the network structure in a meaningful way, and to investigate its role in fostering information flows and thus innovation, researchers found that both the position that the actors have in a network and the interactions in which they engage must be explored. Indeed, typical social network studies address "issues of *centrality* - which individuals are best connected to others or have most influence - and *connectivity* - whether and how individuals are connected to one another through the network" (Newman, 2003: 2).

Nowadays, in social network analysis, there is an ongoing debate on the network structures that coexist and the degree to which they are more or less beneficial. On one hand, high level of network embeddedness is seen as more beneficial, due to the benefits they carry, such as a higher coordination and communication, which enhances trust (Coleman, 1988). On the other hand, instead, structures characterized by a huge number of structural holes, where some actors are connected to others which are not connected each other – are recognized as more advantageous (Burt, 1992b). In those networks, in fact, actors can get access to new information flows through brokers that "bridge"

members of different groups. Other scholars, instead, believe that more value can be derived by the identification and analysis of the most important actors that are active in the network, those that possess a strategic or central location with many close relationships. Indeed, those actors can access to information more easily and transmit knowledge sooner than those in the periphery. Finally, a different set of views – McFadyen and Cannella (2004) – stress the importance that the relational dimension can have in those networks, and focus on the analysis of the number and strength of direct ties, while not considering the embeddedness or centrality issues that the network structure possess.

Social capital, thus, can be nurtured by the structural characteristics of the network of relationships in which the enterprise is embedded. The growing interest toward the social network analysis has meant that researchers are nowadays debating on the pros and cons of specific structures, and their role in fostering information and knowledge flows and, thus, the innovative potential residing in those contexts. On one hand, there is Burt's structural hole theory, which sees brokerage as the most important "conductor" for novel information. It is based on Granovetter's argument that weak ties are the strongest ties when it comes to disseminate a new and a timelier type of knowledge. Indeed, they are characterized by a greater propensity to connect otherwise disconnected groups, thus having two main benefits: first, they carry a non-redundant type of information; and second, the ones acting like bridges, among those web of contacts, can enjoy the benefits of greater control over information diffusion and use. However, if networks with a strong presence of structural holes provide informational benefits, they may hinder the development of trust (Ahuja, 2000). On the other hand, there is Coleman's social theory, which looks at tightly-knit groups of relations as more beneficial. Indeed, networks that possess a heavy level of connections, where everyone is in a relationship with everybody, provide the following benefits: first, they make access to a more valuable type of information, since it has been demonstrated that the quality of knowledge flows deteriorates as they move into a chain of intermediaries (Baker and Iyer, 1992); second, closure reduces the risk associated with a lack of trust of the partners in the network, making collaboration more easy since it is governed by the presence of sanctions (Coleman, 1990). If inter-connected networks favour the propagation of trust, at the same time they inhibit the inflow of "fresh insights" (Ahuja, 2000: 452). Thus, the fundamental disagreement about the network structure that is responsible for social capital's benefit, depends on the fact that social capital is seen as a tension between closure and brokerage (Burt, 2000), and the choice between those structures is characterized by a significant trade-off between the advantages that they can provide. However, according to Ahuja (2000: 452), "under the appropriate circumstances, exclusive, cohesive, and non-redundant connections can all constitute social capital". Indeed, it is widely acknowledged in literature that there is no a simple, universal answer when it comes to identify the most beneficial structure of a network,

since it is dependent on the benefits sought. For example, a network characterized by redundant and interlocking ties is more suitable for those organizations who wants to foster trust and cooperation (Granovetter, 1985; Coleman, 1990). Closed networks, in fact, are better suited when overcoming opportunism is a key essential to success (Ahuja, 2000). If firms' primary business requires speedy access to diverse sources of information, in order to gain competitive advantages in the market, then an open structure with many, non-overlapping ties is most appropriate (Burt, 1992 a,b; Ahuja, 2000).

This project intended to investigate the network structure that characterizes the art industry in Rome, and, in particular, to explore whether there is the presence, or not, of structural holes in the collaboration patterns developed in such contexts. An egocentric-network has been performed, which looks at the network from the inside, and it collects data on one node (also called *ego*), and its ties (known as *alters*). The analysis, indeed, will be carried on through the examination of the network of one specific player in the Roman art industry: the Foundation Giorgio e Isa de Chirico.

The focus of this research is on the art industry, and in particular, in the analysis of the network of the Foundation Giorgio e Isa de Chirico. The reasons behind this choice are several. First, the market structure that characterizes the art industry (and the creative industries in general), makes the study of the network extremely interesting. In such context, few large companies dominate the scene, and a huge number of small companies makes up the rest of the market (Antcliff et al. 2007). Consequently, an analysis of the patterns of interactions between the players in the industry will allow a better understanding of the processes that take place in that specific environment.

Second, collaboration activities are a significant feature of this industry. Indeed, the small size of the firms in the industry, and their project-oriented structure, requires a high level of co-operation. Moreover, the unique characteristics of cultural goods, which, especially in the art industry, are intended as symbolic goods, require a specific focus on the interaction between the firms. Indeed, "the value of art is a function of social consensus, where the opinion of art world insiders has greater weight" (Schönfeld and Reinstaller 2005: 2). Therefore, creative and cultural firms operate within networks of individuals, groups and organizations that are extremely complex. As such, those firms are intrinsically social organizations (Woodman, et al., 1993). They are characterized by overlapping inter-personal relationships (Silverside, 2001; Shaw, 2006), which can span within and across organizational boundaries (Simonton, 1994). Knowledge sharing is, therefore, a fundamental ingredient, as is the cumulativeness of the process of creativity.

A specific actor of the network has been selected as a sample for the study: the Foundation Giorgio e Isa de Chirico. Conducting an analysis of the network through the focal lens of the Foundation Giorgio e Isa de Chirico permits the gathering of meaningful information due to its wide

number of activities, and its strategic location[9]. Moreover, according to Siggelkow (2007: 20), "it is often desirable to choose a particular organisation precisely because it is very special in the sense of allowing one to gain certain insights that other organizations would not be able to provide". Especially in the creative industries, where the operational network is multifaceted, and where diverse stakeholders are involved, the choice of a single organization can provide extensive benefits, by giving deeper theoretical insights with respect to the comparison across different cases (Dyer and Wilkins, 1991).

The following study has been conducted on a specific location: Rome. The reason behind this choice is two-fold. First of all, due to the time constraints that characterize this project, focusing on a single area of analysis allows for a better, and deeper, description and evaluation of the issues explored. Secondly, as mentioned above, creative industries are characterized by a heterogeneous distribution across the territory. Indeed, they tend to be concentrated in specific places since they need to collaborate and co-operate often, and the physical proximity allows for a continuous flow of information. Even if some argued that the spatial dimension is neither a sufficient nor a necessary condition for the transmission of knowledge between the actors of the network, it has been empirically demonstrated that it actually facilitates the establishment of a more "ideological" type of closeness. Thus, investigating the relationships existing between the ego of the network and its alters, which are located in the same geographical context, provides two benefits: it permits to understand whether spatial proximity is really relevant in terms of ties formation and maintenance, and it permits to develop a clearer description of the network under investigation.

Data collection

The data collected for this study have been gathered through both primary and secondary sources of data. Indeed, different collection methods have been combined, in order to access to a wider pool of information. Information gained from telephone interviews, and participant observation with the respondents, have been complemented with the ones resulting from internal sources, such as the organizations' web pages. The nature of this industry, and of the associations and entities that are part of the network, requires a clear understanding of the activities that are carried on in such contexts. Thus, to get a better insight on the type and level of relationships that are developed and nurtured in those contexts, it is important to recognize the core business of the companies that are interacting. Thus, the primary – or at least the most important – source of information comes from telephone

[9] Indeed, the case Foundation is located in the geographical and business heart of Rome, which allows it to be engaged in a complete set of local and national, arts-related networks.

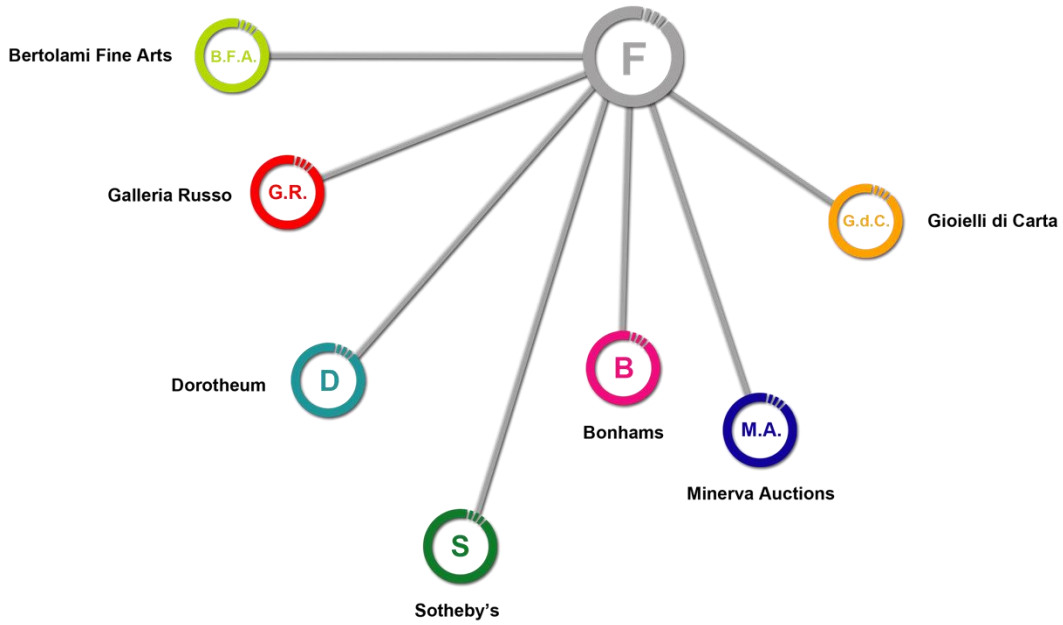
interviews with the participants, and their observation, since they permit to obtain a more accurate and clear picture, coming directly from the respondents' point of view (Ghauri and Gronhaug, 2005).

In this study, the participant observation has been the method used for the analysis of the focal node - the Foundation Giorgio e Isa de Chirico - and the observation has been conducted on a daily basis, for two months. The data needed for the study of the alters, instead, have been collected through structured phone interviews, that have been carried on after having explored the network of activities and relationships that the Foundation possesses.

RESULTS

Before going deeper into the analysis of the relationships existing between the ego and the alter select for the study, a description of those companies, who collaborate with the Foundation, and, of what they do in their daily life, is required. In this way, the peculiarities of the relationships in place will be understood easily. The Foundation Giorgio e Isa de Chirico interacts with six Auction Houses, and one private gallery (Galleria Russo). The figure below represents the players of the industry, which are investigated in the following study.

The Foundation's alters (Figure 8.2.2)



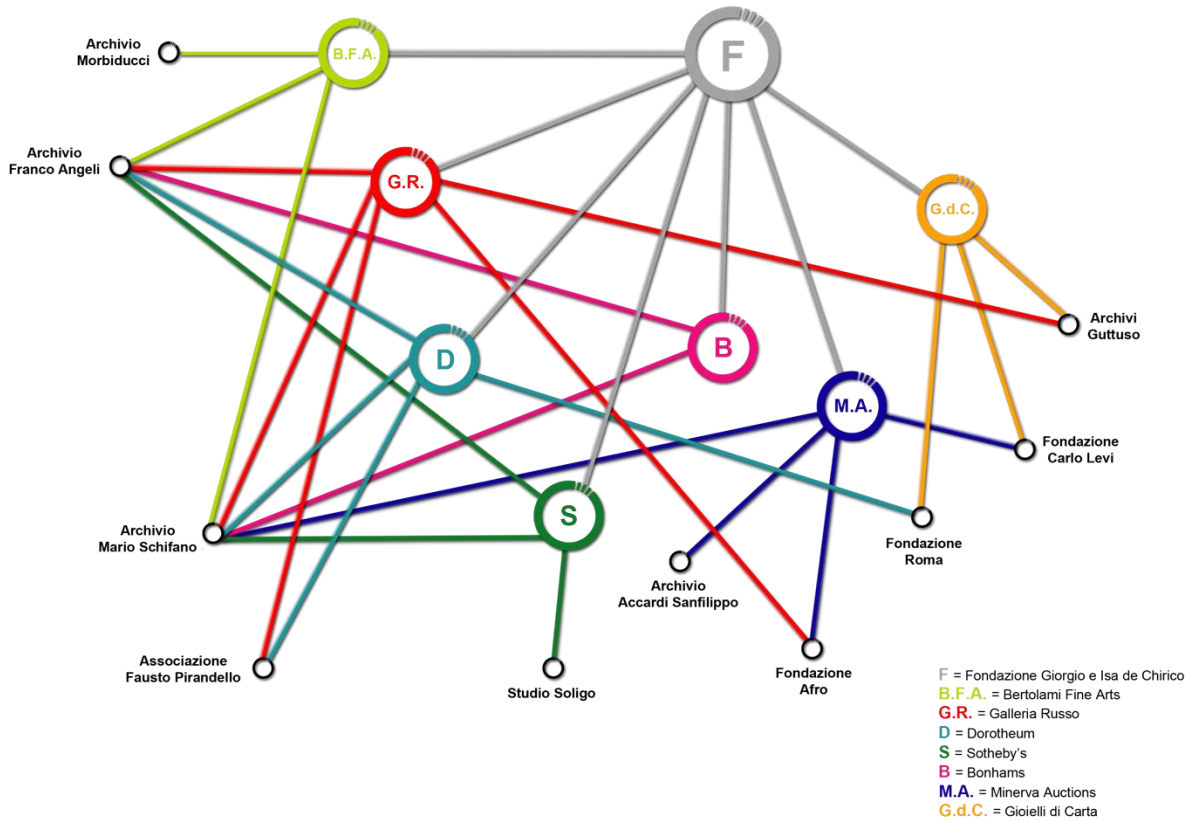
According to Barringer and Harrison (2000: 387), networks can be defined as "constellations of businesses that organize through the establishment of social, rather than legally binding, contracts". This view, usually intends networks as having the form of a wheel or a hub, where the focal node lies at the centre. Its location, indeed, is crucial in order to observe and coordinate the interconnections which emerge from those who are collaborating in the network. The type of connections existing among the Foundation of these alters are characterized by specific patterns of cooperation, which are based on social contracts, rather than mere market ones. When auction houses, or galleries, interact with the Foundation, the relation in place is regulated by legally binding contracts. Their working together, in fact, is usually driven by the need to carry out a working activity, which is part of the core business of both firms. However, despite the contractual type of the relationship, which usually characterizes the exchange, the collaboration goes further. The Foundation and its alters, indeed,

interact frequently, and not necessarily for business matters. Thus, the one-shot transaction becomes the starting point for the development of a solid relation, made of continuous communications and inter-change of information, which in turn generates knowledge spill-over benefits.

The graph below describes the network of relationships existing between the Foundation Giorgio e Isa de Chirico, its alters, and the alters of its alters. The position of the Foundation, and the size of the circle, can be misleading. Even if located at the centre of the graph, it does not represent its level of centrality in the network, in terms of the number of connections it has with others. It indicates, rather, the pivotal role that the Foundation has, as the focal node of the network through which the analysis has been conducted.

The size of the circles of the alters, instead, represents the type of relationships they have with the Foundation (either direct or indirect). The bigger circles refer to the direct connections that the Foundation have, whereas the smaller ones represent the indirect connection of the Foundation, which can be reached through the means of its direct ties. Moreover, colours have been used in order to allow for an immediate identification of both the interactions existing in the network, and the bearers of such relationships. Finally, lines have been used to describe the connections among the members of the network. Even if they are not characterized by the presence of the arrows, the type of relationships represented is reciprocal, implying equal status between the players involved – no hierarchies can thus be found.

The network map of the Foundation Giorgio e Isa de Chirico (Figure 8.3.1)



By looking at the figure above, it is possible to understand the structure of the network and the type of its interactions. From the network visualization, it appears that the network under investigation is characterized by a strong presence of structural holes. As already mentioned, structural holes indicate the degree of connectivity between a firm's partners, and they describe the gaps that may exist in knowledge flows. Indeed, what it emerges here is that the direct ties of the Foundation, those organizations that communicate and interact with it, are not communicating each other, thus creating an "empty space" between several sets of node. Even if some of those ties may have a common partner – beside the Foundation itself –, the relationships that exist between the actors of this network are of a non – redundant type. Due to the the absence of connection between the direct ties of the Foundation, the network is open, and it is not characterized by densely tight knit of relationships. Thus, the Foundation is at the interface between smaller sub-groups, and it acts as a broker, or bridge: its direct ties may access the information coming from the other ties only through the Foundation itself. As a result, the position held by the Foundation allows it to get access to a huge stream of information. Indeed, the exposure to these diverse knowledge flows has the potential to spot the opportunities available in the network, and to regulate the knowledge that is being diffused among the actors. Structural holes, indeed, can be used as means for the identification of advantages, which stem from the development of new and innovative ideas.

Even if the Foundation's alters are not directly connected, they occupy a similar position in the structure. The same is true for the Foundation and the alters of its alters, which are, however, indirectly communicating. As a result, they share similar interests which are usually linked to the type of location they hold in the network. This is known as *structural similarity,* and it is conditioned on the level of visibility: its effect, indeed, depends on the fact that the actors involved know each other existence, and that they occupy a similar position.

Besides the structure of network, and the presence of structural holes in it, the social network analysis measures the activities that are performed in such contexts, through the concept of degrees: the number of direct connections that a node has. The actual number of ties between the nodes indicates the *density* of the network. The figure above shows that the Foundation Giorgio e Isa de Chirico has seven direct connections. Such interactions can provide several benefits: they have the potential to facilitate collaboration, and to provide both resource sharing and knowledge spill-over. Moreover, they can also generate complementary skills, which are developed as a result of their co-operation. Their collaboration is usually focused, thus based on a narrow range of issues which are linked with the activities that underpin the exchange. The number of indirect ties in the network represented above, instead, is higher. Each of the alters has at least two direct connections, which become indirect connections from the Foundation's point of view. Even if those nodes are not directly interacting, there is the likelihood that those ties communicate each other through their indirect connections. Indeed, the random relationships that exist between groups of people, who appear unconnected, can be just a few relationships apart. As a result, the Foundation has eleven indirect ties, which can be reached through its seven direct partners. Galleria Russo connects the Foundation with four different organizations: Archivio Franco Angeli, Archivio Mario Schifano, Archivio Fausto Pirandello, Archivi Guttuso and Fondazione Afro. The other alters, instead, on one hand send back the connection toward relationships already existing – as Sotheby's, Dorotheum, and Bonhams do – ; on the other hand, they provide at least one more relation, whose actors differ from the ones previously established – as it happens with Bertolami Fine Arts, Minerva Auctions and Gioielli di Carta. Those ties serve as communication channels rather than collaborative linkages, and they provide more informational benefits with respect to the direct ties. Indeed, indirect ties are information-gathering and information-screening devices, and provide access to knowledge.

The extent to which those ties are linked through the same third party is measured by the level of *structural embeddedness*, that can be found in the network. A high level of structural embeddedness can provide two distinct kind of benefits: it allows for the collection of a comprehensive information type, where the knowledge coming from both the direct and indirect ties is diffused through the network; and it reduces the opportunistic behaviour, since the fear of a loss of

reputation is high. In this network, indirect ties are mostly archives and foundations who carry out the same type of activities performed by the Foundation. The presence of such connections, thus, enables the collection of information about similar, but still different, type of organizations which are embedded in the same network of relationships. The mutual and reciprocal contacts that are developed among the actors of this network, indeed, allow for the creation of a cohesive and shared understanding of the working style and atmosphere, which in turn shapes the organizational behaviour.

An important measure in the social network analysis is linked to the *positional embeddedness* of a firm in the network, which usually describes the position that is occupied by the actor in question. Positional embeddedness usually measures the degree to which the actors in the network occupy a central position in the structure, and it investigates the extent to which such position may affect their behaviour. Among the centrality measures, **degree centrality** is one of the most relevant, and it usually derived by the number of direct ties that are connected to a node: the higher the number of direct connections, the higher the degree of centrality. Indeed, a huge number of relationships indicate that the actor in question plays an important role in the network. A high level of centrality in the network also indicates that those nodes are best connected, and thus are the one that have the most influence in the network. Central actors, or nodes, not only do they have more influence in their network, but they also have access to different stream of information, and they are usually intended as more trustworthy and reliable. If, on the other hand, the relationships in the network are few, and the level of centrality is low, it means that the actor is not involved in the most important activities performed in the network. In the following study, the Foundation has the highest degree centrality, since it is directly connected with seven individuals. On the other hand, Bonhams is the least connected in the network, since it interacts with only three actors: the Foundation itself, Archivio Franco Angeli, and Archivio Mario Schifano. Galleria Russo and Minerva Auctions are two of the most active nodes in the network, since they possess, respectively, five and four direct connections. If the network is analysed from the alters' point of view, then, Archivio Mario Schifano and Archivio Franco Angeli are those with the highest number of direct connections (correspondingly six and five). At the same time, Archivio Morbiducci, Archivio Accardi Sanfilippo e Studio Soligo are the least active ones, since they have only one direct connection.

Even if it is widely acknowledged that "the more the connections, the better", the number of direct ties in a network, and thus their degree of centrality, is not the only important measure to consider when analysing the structure of the network. Indeed, a significant aspect concerns where those connections may lead. Being connected to a more central individual is more beneficial than

being connected to a peripheral actor[10]. Thus, the measure of **eigenvector centrality** considers both the number of connections an actor has (its degree centrality), and the degree of the alters to which it is connected. For example, Bertolami Fine Arts, Sotheby's and Gioelli di Carta, all of them have a degree centrality of three. However, Bertolami Fine Arts and Sotheby's are interacting with two of the most important actors in the network: Archivio Mario Schifano and Archivio Franco Angeli. On the contrary, Gioielli di Carta, has three alters with a degree centrality of two (Fondazione Roma, Fondazione Carlo Levi, Archivi Guttuso). As a result, the eigenvector centrality for Bertolami Fine Arts and Sotheby's is greater than the one of Gioielli di Carta.

The measure of **closeness centrality**, instead, measures the proximity of the actor (or the node) to all the other actors and nodes that can be found in the network. It describes the distance which separates the nodes in the network, and it indicates how many steps would an actor take to reach the others, and thus diffuse information. Even if some of the actors have a huge number of connections, it may happen that others, with a lower number of connections, can access all the nodes in the network in a quicker way than anyone else, through their direct and indirect connections. Indeed, they may have the shortest paths to all others, and thus the potential to monitor and address the information flow in the network. The closeness centrality measures the average shortest distance between the vertex in the network, thus: the shorter the route (or path) need to reach everyone in the network, the higher its level. From the graph above, it emerged that is the Foundation itself that has the highest level of closeness centrality in the network. Indeed, it can reach all the others in the network with the lowest number of steps. Due to its strategic connections, it is possible to think that Galleria Russo has the most preferred location for the diffusion of information in an easy and immediate way. However, even if it is connected with the most "popular" players in the network, it cannot reach all others in the network through one or two steps, as the Foundation Giorgio e Isa de Chirico does. For example, if Galleria Russo must reach Studio Soligo, it has to first arrive at Sotheby's through Archivio Mario Schifano, who in turn diffuses the information to Studio Soligo. This route requires three steps before reaching the actor concerned. On the other hand, the Foundation can reach Studio Soligo through its direct interaction with Sotheby's, in a shorter path (with a distance of two). Thus, the Foundation is the the actor in the network with the highest level of closeness centrality: it is in a critical location for spreading information through the network. Indeed, it can access the nodes in the network in easier way, having a greater visibility in the network with respect

[10] The peripheral nodes that can be found in the graphs of the following study, are such since they demonstrated to have a low level of centrality for the network under investigation. However, those type of nodes are usually connected to networks that have not been mapped. As a result, even if they are considered as of little significance for the analysis at hand, they may be relevant in other situations.

to the activities carried out in it. The Foundation, in fact, has the shortest path to all the others, since it is closer to everyone else. Thus, it allows for a faster communication with less distortion.

Another measure of centrality is known as **betweenness centrality**. It indicates where the node sits between one or more groups of actors of the network. In particular, it describes the presence or absence of "bridges" – those nodes which have a unique and strategic position – which allow them to connect otherwise unconnected actors. Bridges have a crucial role in such contexts since, once they are removed, as a result, some actors are then excluded from the network. For example, Galleria Russo, Dorotheum, and Gioielli di Carta have a betweenness centrality of zero: their removal would not alter the connection existing between the focal node of the network and its indirect ties. It means that their presence in the network cannot be ruled out, if one of the aforementioned connections is missing. These actors, in fact, interact with multiple direct ties of the Foundation, and, if one of those is going to leave the network, they would still remain, being connected with the others. On the contrary, if the collaboration with actors such as Minerva Auctions, Bertolami Fine Arts, and Sotheby's fails, Archivio Accardi Sanfilippo, Archivio Morbiducci and Studio Solingo will be no more part of the network since they would be excluded from it. The latters are thus known as *pendants*. They are in an unstable situation in which they are constantly at risk of being ostracized from the network, since they are part of it thanks to the presence of a single link of connection. Therefore, their relationships inside the network are labile: if the person in question should leave, they would be cut out from it. Thus, the aforementioned Auction Houses hold a powerful position: they are the only actors who can have access to a stream of information and knowledge which can be diffused if, and only if, their presence in the network is guaranteed.

The distinction between direct or indirect ties, which permits the identification of the benefits and limits that characterize such connections, does not, however, captures the strength of the exchange. Indeed, the presence of direct or indirect ties describes the type of path which connects the ego with its alters, rather than the quality of the relationship itself. Thus, together with the connections existing among the actors in the network (who is connected with whom), it is important to consider the strength and the direction of the relationships investigated (whether they are strong or weak, one-way or reciprocal), in order to describe the degree of connectivity that the network possess. On one hand, *strong ties* concern those relationships that are characterized by frequent interactions and feelings of closeness, and they require a huge investment in terms of resources, time and energy, for their maintenance. On the other hand, instead, *weak ties* can be of a higher number since they do not require a strong effort to be maintained. Weak ties are usually considered as critical to innovation, since it is more likely that organizations or individuals can get access to a new stream of information, that stronger ties do not possess – the information pool to which they have access is, indeed, the same.

Especially in business settings, a good balance between weak or strong ties is needed, in order to avoid to have a limited access to fresh, valuable information.

Relational embeddedness indicates the depth of the dyadic exchanges existing between the actors in the network. The depth of the relationship describes the degree to which exchange parties consider one another's needs and goals. A high level of relational embeddedness is characterized by recurrent and repeated interactions, which become a source of familiarity and increase the level of trust among the actors, thus resulting in a higher level of reliability. This in turn, reduces uncertainty, by facilitating coordination, and it becomes the ground for future interactions. A high degree of relational embeddeness is thus crucial for detecting and exploiting opportunities which refer to a type of knowledge that is tacit (know-how). Indeed, know-how refers to the accumulated skills and expertise in specific activities, which is usually difficult to codify and transfer in a direct way. Thus, a deep relational level is required in order to transmit such "non-codified" knowledge.

In the following study, the collaborations that the Foundation initiate with its direct ties can be of varying intensity, due to several reasons. From the interviews, it emerged that the type of communication between the Foundation and those Auction Houses, which are embedded in the Roman territory, is different from the one between the focal node and other Houses of a more international breath. Indeed, even if companies such as Bonhams, Dorotheum, Sotheby's or Christie's are widely involved in the activities and initiatives that are carried out in the city under investigation, their collaborations tend to be limited to those situations in which their alters' skills (and resources) are required. Otherwise, the relationships with those Auction Houses, and galleries, which operate mostly in Rome (such as Minerva Auctions, Bertolami Fine Arts, Gioielli di Carta and Galleria Russo) are constituted by a rich and efficient flow of information, since their interactions take place in the same geographical context, where the players of the industry are well-know, and continuous updates are required to keep up with the news.

DISCUSSION AND CONCLUSION

This study examined the type of network structure that characterized the art industry in Rome, and it explored whether there was the presence, or not, of structural holes in the collaboration patterns developed in such contexts, by investigating the Foundation Giorgio e Isa de Chirico. The ego-centric network analysis performed has made it possible to identify the main features possessed by the network under investigation, such as its density, and its the level of embeddedness, together with measures of degree centrality, eigenvector, closeness and betweenness centrality.

The co-operation patterns developed in such contexts resulted to be of the type "one-to-many", where some of the alters of the ego have established relationships with several players of the industry. Cliques can be identified, formed by different players, who are not working together. However, some of the small sub-networks resulting from those cliques are someway – directly or indirectly – interacting. Thus, some actors in the network act as bonding elements between the other players in the industry, who are involved in the network of collaborations. They have the potential to bridge among the others, and thus obtain the most powerful type of information. The structure emerging is, therefore, open, and rich in structural holes, with some actors at the service of everyone and yet others not even communicating. The Foundation acts as an informational broker, since it is in the position to move knowledge to more people. It can reach all the members of the network with the lowest number of steps, being able to communicate in a more efficient way. It operates as a boundary spanner, since its interactions goes beyond the communication between its local, immediate cluster. Its role as a gatekeeper makes it able to control and broke the information spreading in the network. Moreover, its strategic location allows it to combine different type of knowledge and ideas, which may derive from various places. In addition, the high level of degree centrality that the Foundation has, demonstrated how well-connected it is, and how influential it can be in the network.

The result of this study confirmed what a huge stream of literature have already claimed: creativity requires speediness, and speediness requires flexibility. Those values, therefore, necessitate of a network structure which can span the informational gaps, due to the need of being responsive and able to shift network time and energy from one solution to another.

Collaboration is yet a prominent feature of the creative and cultural industries. Thus, as a result, one may argue that the most beneficial structure should be a densely connected network, which favours the propagation of trust, and in turn, collaboration dynamics. Indeed, the most beneficial structure is the one in line with the goals to be pursued. Then, how is it possible that, in such a co-operative type of environment, an open structure emerged? Because co-operation is just the mean, through which justify the end. Inter-firm collaborations are developed in order to gain competitive

advantages in this type of industries. Superior performance can be achieved if it is possible to get speedy access to diverse sources of information, in order to identify the opportunities arising in the market, and exploit them. If such preferential access can be favoured by the establishment of a relationship with another actor in the industry, then so be it. Therefore, co-operative behaviour is still crucial and absolutely relevant, but it does not necessarily represent the benefit sought by the firms. Interactions may be recurrent and repeated, but they can also be limited to the performance of a specific activity or to the realization of a determinate event – as may happen due to the project-oriented structure of those industries. The presence of structural holes in the study demonstrates that there is opportunity for brokerage. However, in order to exploited, brokerage requires a high level of absorptive capacity. Thus, would the Foundation be able to recognize the value of such external information and take advantage of it? Would it be a *tertius gaudens*, or a *tertius iungens*?

Limitations of the study and further research

There are several limitations in this study. First of all, one of the issue encountered, concerns the access to available and reliable data. Due to the nature of the research – which deals with the exploration of the relationships existing among the players in the network – the gathering of data has been extremely challenging. Indeed, when respondents are asked about the network in which they are embedded, they tend to be reluctant in yielding the information required. Especially some of the most important Auction Houses such as Christie's, are subjected to specific confidentiality agreements which does not allow for the disclosure of any type of data, even if it does not relate to the client's sensible information. As argued by Heath et al. (2009), those alters are part of what is known as a "shadow network", which is made of those ties who are important for the ego, but could not get first hand data about it. In those situation, the problem has been eluded by asking to the ego and the alters some information about the player in question, or by gathering information and data directly from the organizations' website, in order to address the inquiry with a certain level of specificity. However, the possibility of collecting exclusively secondary data does not allow for the inclusion of such organizations in the network mapping.

Moreover, the network under investigation is limited to the ego and its alter, and it focuses on inter-organizational relationships of first-grade. Indeed, information regarding the alters of the alters are missing, due to the time constraint and resource limitations characterizing the analysis. Even if a smaller sample of data is still suitable for conducting qualitative researches, investigating relationships of second-grade would lead to the identification of a wide range of organizations and entities that build the network. Identifying more players in the same geographical context, may lead to the development of a road map, which describes the entire environment in more detail. In addition,

a comparison with another type of association in the same industry can be pursued, in order to identify the similarities and differences existing, and thus draw some valuable advices and recommendations.

Along with the expansion of the sample under investigation, a widening of the methodology used may be beneficial as well. A mixed-method can be employed, including both qualitative and quantitative tools. For the following study, the qualitative approach has been absolutely legitimate, due to the small sample size analysed, and its ability to disclose and produce a specific type of data that were most relevant for the purpose at hand. However, if the number of the actors in the network increases, the inclusion of a quantitative method of analysis is not only preferable, but it is also necessary, in order to allow a more comprehensive research.