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# Networks as Powerful Tools to Overcome SMEs' Difficulties in Innovation and Internationalization Processes

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## INTRODUCTION

The majority of industries nowadays are characterized by a rapid pace of technological change, thanks to the internet and the huge availability of information it allows. This brings each company to continuously look for new combinations of different skills and competences required to improve its offering and, in turn, to maintain its competitiveness and survive in such a complex environment.

In the past there were more big firms which performed on their own all the activities necessary to produce final products. However, some of their characteristics considered as strengths have started to appear as weaknesses in the last decades. In fact, the increasing demand for innovative products, which usually have a short product life cycle, makes unsustainable a vertical integrated structure. This implies that a single organization does not possess all the knowledge, flexibility and speed required to produce competitive goods. Such needs have brought to a process of vertical disaggregation and the formation of many enterprises of smaller size (SMEs). Moreover, companies have then started to form alliances because of the well-known liabilities due to the size (for example, scarce availability of resources, possessing few skills, low contractual power and difficult access to knowledge).

Today the majority of firms are of small to medium size. For example, according to the European Commission (2016), SMEs represent the 99% of the businesses in the European Union. In addition, many of them are involved in different types of partnerships with other firms. In fact, they have discovered that the network is a powerful tool to overcome their above-mentioned limitations and to access advantages they would not capture by going solo. In my dissertation, among the several scopes that firms may have, I will focus in particular on innovation and internationalization because I think that they are two critical ingredients for competitiveness of firms and that networks can play a determinant role in leveraging them.

This thesis starts presenting the network form of organization. It follows analysing the reasons that bring firms to participate into networks, its formation process and

the related difficulties. Different types of governance are then presented and critical considerations are raised as regards the effectiveness of networks. Finally, a case study analysis, conducted in a consortium of firms operating in the lighting industry is proposed. The aim is to verify the crucial role of networks in helping firms in performing their processes of innovation and internationalization.

## Chapter one

### WHAT ARE NETWORKS

#### 1.1 Neither market, nor hierarchy

Scholars have spent many years trying to recognize and understand what networks really are.

In his famous article *The Nature of the Firm* (1937) the classic economist Ronald Coase, considering their governance structure, affirmed that firms and markets were alternative places where transactions can occur.

Nearly forty years later Williamson used the transaction cost economic theory to explain his point of view. In particular he stated that hierarchical structures are more likely to occur when transactions are frequent, involve dedicated investments and their outcome is uncertain. This is because actors are naturally affected by bounded rationality and opportunism. On the contrary, when connections are occasional, do not require dedicated investments and are less uncertain, market transactions are a better solution (Williamson, 1975).

However, as researchers moved the focus from the governance to the organization, a new form emerged, characterized by peculiar advantages that neither market nor hierarchy possess. The crucial point was to understand whether this form would be considered as a hybrid one, located in a continuum between market and hierarchy, or a completely different type of organization with fuzzy boundaries. One of the most accredited work in this field was done by Powell (1990), who embraced this second point and argued that firms' boundaries are not strictly defined, rather, in their daily life companies collaborate with others to have access to a broader range of resources and knowledge and therefore to satisfy easily and better customers' needs. As regards the peculiarities of this new form, Powell (1990) identified: long-term cooperation, incentives for learning and spread of information, ease in utilizing and enhancing tacit knowledge and technological innovation.

Some years later, Podolny and Page (1998) contributed to this argument by stressing the fact that networks are characterized by values such as ethic and trust, which are in contrast with the more adverse postures that characterize both market and hierarchy forms.

Finally, going back to the transaction cost economic theory the literature proposes specific conditions which make network governance particularly effective and efficient compared to market and hierarchy. For example, the recent contribution by Schrank and Whitford (2011) is interesting because they affirm that unstable demand, rapidly changing knowledge or complex interdependencies between component technologies constitute a suitable environment for networks to arise.

## 1.2 Network definition

Many definitions of network have been suggested. After a brief review of the literature (Podolny and Page 1998; Provan, Fish and Sidow 2007, Powell 1990), perhaps the one which better reflects the heterogeneous phenomenon I want to analyse was proposed by Podolny and Page in their article *Network Forms of Organization* (1998). According to the authors, networks can be described as “any collection of actors ( $n > 2$ ) that pursue repeated, enduring exchange relations with one another and, at the same time, lack a legitimate organizational authority to arbitrate and resolve disputes that may arise during the exchange” (1998: 59). This definition has been adopted by many scholars (such as Shrank and Whitford, 2011; Moretti and Zirpoli, 2016), probably because it is neither misleading nor limited.

In contrast, Powell (1990) gave a too much generic definition considering any other arrangements which cannot be comprised in the concepts of market or hierarchy (he included also employment relations and similar collaborations), while the other authors adopted a too narrow approach, excluding many collaborations that will be taken into account.

### 1.3 Vertical and horizontal networks

A first general attempt in trying to distinguish the different arrangements it is talking about, is between vertical and horizontal networks.

Vertical networks involve collaborations among upstream and downstream actors in a vertical supply chain, that is, between buyers and suppliers; on the contrary, horizontal networks are related to collaboration among peers (i.e. among competitors). Tomlinson and Fai (2013), to stress this difference, talked about co-operation and co-opetition.

Interestingly to my analysis, the authors also conducted an empirical study over 371 UK SMEs. Their aim was to investigate the relationships between the type of network (vertical or horizontal) and its degree of innovativeness. To measure this second information, they asked for the number of new product and process innovations each company introduced in the previous three years and then they made the average of these answers. The same approach was adopted also by Tsai and Ghoshal (1998) and by Molina-Morales and Martinez-Fernandez (2010). Rather, to assess cooperation, scholars asked respondents to give a score to specific coordination activities in a Likert scale ranging from 1 to 5 (where 1 meant absence of cooperation while 5 indicated great cooperation), to avoid meaningless yes/no answers. Table 1 shows the detail of the activities investigated in the interviews.

As regards vertical networks, evidence demonstrated that there is a positive relationship between product innovation and cooperation with both buyers and suppliers; while only supplier relations are relevant for process innovation. Instead, as regards horizontal networks, there is no significant relation with innovation, supporting in this way former findings from Freel and Harrison (2006). Nevertheless, this last result is partially in contrast with a previous empirical study conducted by Tomlinson (2010) over 436 UK SMEs. Actually, some years before the author found out that horizontal networks are positively related with innovation, even if with the unique aim to avoid replication of research activity.

**Table 1 Variables analysed, indicators and methods of evaluation (My elaboration from Tomlinson, 2010 and Tomlinson and Fai, 2013)**

Variables investigated	Activities to assess the variable	Method used to measure the activities
<b>Product innovation</b>	<ul style="list-style-type: none"> <li>• number of new products introduced</li> <li>• number of adjustments to existing products</li> </ul>	Scale 1-7, where 1=absence of innovation 2=from 1 to 5 innov 3=from 6 to 10 innov 4=from 11 to 15 innov 5=from 16 to 25 innov 6=from 26 to 50 innov 2=more than 50 innov
<b>Process innovation</b>	<ul style="list-style-type: none"> <li>• number of new assets introduced in the production process</li> <li>• number of new raw materials adopted</li> <li>• number of organizational modifications adopted in the production process</li> </ul>	
<b>Cooperation with buyers on product innovation</b>	<ul style="list-style-type: none"> <li>• better quality of products</li> <li>• different design</li> <li>• transfer of information and practices</li> </ul>	5 point Likert scale, where 1=absence of cooperation and 5=great cooperation.
<b>Cooperation with buyers on process innovation</b>	<ul style="list-style-type: none"> <li>• promotion and delivery of products</li> <li>• manufacturing management</li> <li>• advance in technologies</li> <li>• transfer of information and practices</li> </ul>	
<b>Cooperation with suppliers on product innovation</b>	<ul style="list-style-type: none"> <li>• better quality of raw materials</li> <li>• transfer of information and practices</li> </ul>	
<b>Cooperation with suppliers on process innovation</b>	<ul style="list-style-type: none"> <li>• more rapid deliveries</li> <li>• employees training</li> <li>• manufacturing management</li> <li>• advance in technologies</li> <li>• transfer of information and practices</li> </ul>	
<b>Cooperation with competitors on product innovation</b>	<ul style="list-style-type: none"> <li>• different designs</li> <li>• transfer of information and practices</li> </ul>	
<b>Cooperation with competitors on process innovation</b>	<ul style="list-style-type: none"> <li>• promotion and delivery of products</li> <li>• employees training</li> <li>• manufacturing management</li> <li>• manufacturing subcontracting</li> <li>• advance in technologies</li> <li>• transfer of information and practices</li> </ul>	

In an attempt to clarify these somewhat opposite results, another study was carried out over 838 Australian SMEs (Corral de Zubielqui, Jones and Statsenko, 2016). In this third study, authors assessed innovativeness by looking not only at product and process innovations but also by collecting information as regards organizational and marketing novelties. They then counted how many different types of these four innovations a single enterprise had adopted in the past two years. Surprisingly, authors found that cooperation with competitors reduces innovativeness, probably because of the reluctance to join research activities with peers.

Thus, the divergence of the findings of these studies as regards horizontal networks highlights the existence of a gap in the literature that should be filled by future researchers. Maybe, these differences are due to many factors: market share, difference in the degree of innovativeness between firms, culture and other environmental conditions. In fact, despite the well-known difficulties which characterized the last decade, many famous Italian industrial districts are horizontal networks in which reciprocity and trust are successfully combined to speed up product development, obtain economies of scale, and combine different high-quality resources.

The same example helps to confute the thesis suggested by Huizing (2011) according to whom vertical networks are the closest and friendliest in terms of relations. Therefore, it has to be concluded that this statement cannot be generalised to all networks, each of which is a unique reality with its own characteristics.

Finally, it has to be exposed a scepticism about the existence of pure horizontal or vertical networks; actually, many different relationships can coexist within them. For instance networks which are formed of only vertical alliances, during their development may end up with embrace also horizontal alliances and vice versa, because of a change in scope or other circumstances.

Therefore, all these considerations suggest that the most interesting way to look at this classification is its contribution to a better comprehension of the relations that occur among the actors involved (for example, competitiveness, trust, propensity to cooperation) rather than a pure taxonomy purpose.

#### 1.4 Formal and informal networks

Another interesting distinction is the one between formal and informal networks. The literature is huge but quite misleading, since there is not agreement about the appropriate terminology and rarely complete groupings are proposed. To present this second classification, the approach proposed by Shilling(2010) as regards formal networks will be adopted, while the arguments by Grandori and Soda (1995) and Kilduff and Tsai (2003) concerning informal arrangements will be followed.

Formal networks are formal alliances established among partners.

Interesting insights as far as these contracts are concerned were offered by Albers, Wohlgezogen and Zajac (2013). Authors stated that formalization encourages the diffusion of valuable procedures to improve the spread of knowledge among partners, but it can also create some problems. In particular, it can leave the establishment of trusting relationships to the mere choice of entrepreneurs, inhibit creative and spontaneous actions and also limit any proposal of change.

Another point comes from Simard and West (2006), who observed that licensing and strategic alliances can represent occasions where informal relationships can arise and thus knowledge can flow in a natural and unpredicted way.

Therefore, a constant monitoring of results is advisable in order to assess success and eventually correct unsatisfactory strategies.

Formal networks can take many forms but the most common used in the technology innovation field are strategic alliances, joint ventures, licensing, outsourcing and collective research organization.

#### Strategic alliances

The term strategic alliances covers any type of formal relationship between two or more actors. Shilling (2010) considers in its definition also informal arrangements but as saw above this is not always the case, since it ends up to include other arrangements which are formed informally and without a specific strategic intent (at least in the initial phase). Moreover, other authors use the term as a synonym of

formal networks; however, it has been demonstrated that the category is wide and includes other specific arrangements.

This definition encompasses a wide range of alliances in which all the formal arrangements that are excluded by the other typologies presented below can be collocated.

Doz and Hamel (1998) have identified two dimensions along which strategic alliances can be categorized. The first one is the degree to which they practice capability complementation or capability transfer. It looks at firms which combine capabilities and other resources of partners and put emphasis on their ability to internalize and use such resources also for their own purposes. The second dimension, instead, investigates whether an actor manages each alliance individually or manages a network of alliances. In this last case, it is considered as a coordinator of the network.

#### Joint ventures

These formal alliances consist in combining part of resources of each member firm to establish a new jointly-owned company (Lu and Beamish, 2006). The main scopes of these collaborations are internationalization and access to partners' tangible and intangible assets. The fact that resources of different firms are merged makes these networks international strategies particularly suitable for SMEs' needs. However, the presence of many owners may create problems as regards management: different governance mechanisms and entrepreneurs orientations, lack of knowledge about foreign markets and different purposes can create contrasts (Beamish and Lupton, 2009). For these reasons, contractual arrangements are written to specify each party's commitment of resources and share of results.

#### Licensing

This is a contract in which one party obtains the right to use another party's proprietary technology. Hence, it is diffused especially in sectors where R&D activities and innovation technologies are fundamental drivers (Robinson and Stuart 2006).

The advantage for the receiving firm (i.e. the licensee) consists in acquiring new technologies cheaply and rapidly. Some licensors use this practice as a sort of insurance against the risk of failing in commercializing and exploiting the new technology: a sure stream of royalties rather than a big gain (or loss) derived by competition with other technologies. Instead, the licensee reaps the benefit of this contract only if it is able to capture its advantages quickly before other competitors develop or license the same technology.

The relationships established among firms is usually long-lasting. In the business network field this contract is considered particularly advantageous from the point of view of the licensor, who can reach in this way the clients of the licensee (Forsgreen and Johanson, 2014).

### Outsourcing

Outsourcing consists in subcontracting certain activities to an external party. The reasons that bring firms to externalize some activities to their partners are different: satisfying the increase in demand without committing in new investments, specializing only in those activities from which they derive competitive advantage while providing anyway clients with final products, improving efficiency by obtaining economies of scale and increasing responsiveness to market (Quinn 1999; Möller and Halinen 1999; Fan 2000, Mouzas 2006). Given its strategic role, outsourcing produces vertical networks of strong ties among actors (Möller and Halinen, 1999). However, the lost possibility to learn new skills, the transaction costs required and the fear to loose proprietary technology are all deterrents to outsourcing.

### Collective research organization

These collaborations can take many forms. Usually, they are formed through government or industry association initiatives but there can be also private initiatives. In any case, these arrangements often represent the only way for firms to engage in R&D activities, because of the huge costs required. Empirical analysis demonstrated that research networks are characterized by a high degree of connection among members (Cassi, Corrocher, Malerba and Vonortas, 2008), and

this suggests the presence of simultaneous informal relationships, as argued by Bougrain and Haudeville (2002) and by Teirlink and Spithoven (2013).

These last two authors conducted an interesting survey over a sample of 140 Belgian SMEs. Scholars, more precisely, explored the relationship between the type of researchers (i.e. managers and PhD holders) and the size of firms. Evidence demonstrated that micro firms (i.e. companies with less than 25 employees) are less likely to engage in R&D collaboration, because of their limited resources and skills to engage in research activity and understand its output. Rather, both small and medium size firms are likely to collaborate in research activities. However, in firms with more than 50 employees research managers are more involved in guiding research activities and are reluctant as regards informal exchange of information. This last statement confirms previous research by Bougrain and Haudeville (2002).

How firms can make a choice? Many are the factors firms take into consideration. Mainly, they include whether the potential partner possesses the desired resource, the degree of risk of losing proprietary technologies, the importance to control new product development process and the role or the degree to which the collaboration brings to the development of the firm's new capabilities or gives access to those of partners. Therefore, every decision of formal collaboration is the result of a careful evaluation of the trade-offs involved and is strictly related to the degree of risk aversion of each decision maker.

As regards informal networks, literature is scarce and mainly refers to interactions among employees within the same firm. However, similar relationships can occur between firms and even managers sometimes can encourage them (Kilduff and Tsai, 2003). Where these linkages exist, they create informal networks (more precisely, social networks) which consist in purely social relationships not attached to any kind of formal agreements (Grandori and Soda, 1995). Gulati and Puranam (2009) in their definition of informal organizations considered also "the norms, values and belief that underlie such behaviours and interactions" (2009:427). As noted by Grandori and Soda (1995), norms and social control mechanisms are useful for employing communication and joint decision-making mechanisms and therefore they make these networks more appropriate to regulate exchanges in which the support and

the performance of each partner are difficult to both distinguish and measure (*ibidem*). Other famous cases where informal linkages have proved to be effective are industrial districts, in which information and know-how transfer occur without necessarily formalities (*ibidem*). Overlapping between work-related transactions and patterns of social relations are common situations (Kilduff and Tsai, 2003). An important consequence for firms is the possibility to know new partners with which start new business relations. Nevertheless, the main obstacle to the formation of these informal networks is the reluctance to share information and this is why parties usually carefully evaluate the possible risks before engaging in such collaborations or choose more formal agreements.

As it was concluded in the previous classification and as it can be suggested by considering the spontaneity with which informal networks are formed, there are few pure formal or informal networks. The argument proposed by Freeman (1991) as regards the technology accumulation process within networks can be considered as illuminating to explain the connection between these two types of relationships. He started by observing that both informal networks and tacit knowledge are characterized by difficult classification and measurement processes. The author then affirmed that “because tacit knowledge is so difficult to communicate, the movement of people, in addition to documents and drawing, is usually essential for effective technology transfer; hence, behind every formal network, giving it the breath of life, are usually various informal networks” (1991: 503).

Finally, research supporting this point come out from Uzzy (1997). The author conducted a survey over twenty-three apparel firms in New York City and found that company’s performances increase with the use of frequent informal connections with partners, because they are more suitable in the transfer of complex information. Then, considering also the importance of formal links, he concluded that a balance between formal and informal relationships is necessary to optimize firm’s performance within collaborations.

Many other taxonomies of networks have been done in the literature but in my opinion the two proposed above are sufficient to understand the themes involved in this dissertation.

In the following chapter it will be presented the advantages firms can derive from their participation into networks and the different purposes they can pursue. More emphasis will be put on innovation and internationalization, which are the main scopes of my analysis.



## Chapter two

### WHY FIRMS CHOOSE TO COLLABORATE

#### 2.1 The firm point of view

Collaboration is a crucial decision for firms, which implies a new organization of activities and a new investment in time, risk and assets (both tangible and intangible) that have to be carefully evaluated. Obviously, the effectiveness of a network cannot be assessed in advance and firms usually base their appraisals on the potential advantages they wish to capture. Collaborative advantages can be defined as the strategic benefits gained over competitors in the marketplace that cannot be attained by acting independently.

##### 2.1.1 Advantages at firm or at network level

As regards this topic, different are the levels of analysis under which authors have based their arguments. The most widely diffused are the firm and the network levels.

The first explains how the participation of a company in a network impacts on its actions and results (Provan, Fish and Sidow, 2007). Therefore, it helps to understand the influence of a network on firm's performance, the types of collaborations which are more beneficial for organizations, the influence exercised by each position occupied by companies within the network and how this position can evolve over time (*ibidem*). Literature concerning this point uses also terms such as 'micro-level' and 'egocentric'. As regards the single individual, there is not agreement among authors whether it has to be the unique focus of a separate analysis or if it can be encompassed in the firm level analysis. The second approach, on the contrary, focuses on "explaining the properties and the characteristics of the network as a whole" (*ibidem*:484). This method presumes that all the firms which collaborate have nearly the same goal and the aim to optimize network outcomes can overshadow the success of each single actors (*ibidem*). It is more appropriate, for

the aim of my dissertation, to follow the first approach and to analyse firm-level advantages, even if both are relevant to fully comprehend the network dynamics.

Benefits are not always the same for all networks. After a brief review of the literature (Powell, Koput and Smith-Doerr 1996; Podolny and Page 1998; Shilling 2010; Müller-Seitz 2012; Massari, Riggio and Calace 2015), the following advantages have been identified.

#### Durable cooperation

Considering the complexities deriving from the formation of a network, the important implications for the competitiveness of each firm and the time required to combine activities and produce outcomes, the cooperation have to be long-term. This aspect is positive for firms, since it represents a guarantee for the commitment of the other parties and for the possibility to capture potential returns.

#### Gaining internal and external legitimacy

Firms can improve the perception of their activities by other actors and even by their employees, thanks to strategic collaborations with reputed partners.

#### Improving economic performances and efficiency

Several economic benefits can be obtained by firms which share costs or activities with parties. For instance, it can be thought about economies of scale (such as sharing marketing campaign's costs) while, as regards effectiveness, it can be considered the outsourcing of activities to partners which have a competitive advantage on them. In addition, firms can focus more on what they excel, reaching important benefits in terms of efficiency and level of specialization, thanks to the possibility to take advantage of external specializations.

#### Sharing risk

An important incentive for the participation into network is the possibility to manage resource dependencies and uncertainty associated with new products, markets, researches, technologies or investments.

### Improving contractual power and facility to collaborate with non-private institutions

By starting alliances with partners firms have access to discounts and facilitation they would not obtain by going solo. Similarly, they can have the possibility to participate to announcements from governments and other institutions. Often, this is also seen in an optic for exporting toward international markets.

### Flexibility

Collaboration is a strategic way to be able to rapidly satisfy unexpected increase in market demand.

### Disseminate new standards and launch new technologies on the market

Partners can agree to adopt a common standard with the benefit to spread the technology among customers and recover rapidly R&D costs.

### Learning

Countless are the meanings that this word incorporates. First of all, networks are fertile grounds to transfer and integrate new skills and acquire (tacit and explicit) knowledge. Consequently, they are considered particularly suitable even to develop innovations by SMEs, which normally do not possess necessary resources, thanks also to the involvement of sectors. This means also a rapid transformation of ideas into practice. This is especially the case when multi-sectorial alliances occur. In addition, networks allow to differentiate knowledge in different to adopt a global orientation and searching for new opportunities and knowledge.

These advantages help firms to reach their scopes.

## 2.2 Main objectives firms aim to capture

Each company may have its own scopes to start a collaboration. In a qualitative study conducted in May 2012 over about 300 Italian SMEs, were investigated the reasons that bring firms to participate in networks. Findings revealed that the main scopes are:

- increasing competitiveness as regards the Italian market (64%);
- product or service innovation (60%);
- R&D activities and the creation of a common brand (52% each);
- internationalization (51%).

Furthermore, looking at the third 'Osservatorio Intesa Sanpaolo-Mediocredito Italiano sulle reti d'impresa' (2013), firms affirmed that the reasons of their participation in networks are:

- efficiency, improvement of marketing and distribution activities and R&D activities (50%);
- creation of common brand (32%);
- improvement of the environmental sustainability (21%);
- increasing the production processes abroad (4%) and in Italy (3%).

It is interesting to note that pure economic purposes are not the main reasons that bring to collaboration, rather, strategic purposes are definitely considered more important. It can be thus observed that firms are aware of the relevant efforts that participation in networks imply but they also believe in the helpfulness to overcome their natural constraints.

In the following paragraphs the focus will be put on innovation and internationalization scopes because they are the object of this thesis.

### 2.3 Innovation

Since the end of the 1970s an increase in the R&D collaborations among actors of various sectors have profoundly changed the innovation process, making the network of innovators a commonplace. This is because entrepreneurs have understood the great potentialities offered by networks. Looking at statistics from European Commission in the year 2012, only 7.5% of the Italian innovative SMEs affirmed that building alliances is not relevant. Today, especially in high-tech industries, networks are complex alliances composed of firms, universities and government labs. In fact, a single firm requires many different updated resources to

stay on top of all areas necessary and bring innovation to market. Thus, networks are seen as locus of innovation where learning is created to improve firms' competitive position.

### 2.3.1 The cycle of learning

The fact that the original knowledge created through alliances neither can be easily replicated by a single firm nor can be found in market transactions is a crucial characteristic of this form of organization. A well-developed explanation of how networks create and leverage learning was offered by Powell, Koput and Smith-Doerr (1996), who identified the 'cycle of learning' in a sample of biotechnology firms. I have summarised the salient steps of this cycle in the four points below:

- firms start collaborating (with various scopes, such as R&D);
- experience in collaboration develops both firm's reputation and ability in managing relationships with other actors. When these interactions become frequent and intensive, they are called ties;
- these ties give access to further different relationships: the portfolio of contacts starts becoming heterogeneous;
- as these ties increase, the firm becomes more centrally connected within the network. Central connectedness is a favourable position because brings both full access to critical resources, useful for the firm's rapid growth, and new alliances, which help the cycle to restart.

The knowledge created in this virtuous cycle represents the foundation for innovations.

It must be observed that both internal and external research is necessary for firms to innovate. In particular, the first serves to evaluate and understand studies done by others (Narula, 2004) and to produce innovative outputs to attract new partners. The second, instead, is required to obtain rapidly updates and resources that cannot be generated internally and in turn to facilitate innovation.

Another important aspect is the heterogeneity of partners. This implies more experiences, capabilities and opportunities that, in turn, encourage the generation of newer combinations. Therefore, it is at the intersections among different skills that innovations occur. From the individual company's point of view, heterogeneity is particularly beneficial because:

- promotes protocols for the exchange of information to avoid disputes;
- improve learning capacity;
- helps the firm to become a central player;
- makes the network more attractive and thus encourages the entrance of new strategic partners;
- helps to sustain the pace of change thanks to the availability of different knowledge.

Finally, an important factor to take into account is appropriability. This is “the degree to which a firm is able to capture the returns from its innovation” (Shilling 2010:188). In complex networks it often substitutes trust and obstacles the free spread of learning. Thus, appropriability represents a real limit to the potential of collaborations to generate innovation, in addition to low networking among actors. This is why sometimes figures are adopted with the role of mediate the transfer of knowledge among actors within networks.

## 2.4 Internationalization

Surveys underline that firms see networks also as drivers both to reach markets abroad and to improve their global competitiveness (Community Innovation Survey, 2012). In the following paragraphs it will be explained this point.

### 2.4.1 The drivers of internationalization and the link with innovation

Nevertheless nowadays, in such an interconnected and changeable environment, it is unrealistic and limited to explain the rationales that push firms to internationalize only by referring to the economic downturn. Actually, businesses go abroad also to

expand their too narrow niche market, to exploit economies of scale, to avoid a price war with competitors in the internal market and to take advantage of different prices and legislations. In addition, as pointed out above in this chapter, a priority of enterprises today is to continuously learn and acquire new skills that allow them to innovate and, in turn, to be competitive. Hence, globalization represents one way to reach this goal. In essence, learning is rooted in different locations and in different relationships and has to be found and merged to ensure the survival and success of firms.

Before the advent of internet, when no one thought about the exponential level of interconnectedness and information availability that it would have brought, innovation and internationalization were considered as two different goals that firms could pursue separately. Today, instead, they are commonly considered two overlapping strategies, where one depend on the other and vice versa. The main reason is that the more recent literature about internationalization have started to consider learning as a central element (for example, see Tiwari and Buse 2007; Kafouros, Buckley, Sharp and Wang 2008; Pittiglio, Sica and Villa 2009; Onetti, Zucchella, Jones and McDougall-Covin 2012).

Regarding technology-based firms, authors underline the increasing pace of innovation and the constant strong competitive pressures as distinctive features. The business environment of these firms is genuinely international (global customers, investors, researchers, distribution channels and competitors) and thus the connection with innovation is a natural circumstance.

A similar relationship can be found concerning born global firms, which operate abroad from their origins. Their peculiarity is the use of innovation, knowledge and capabilities to conquer the international market (Knight and Cavusgil, 2004). More precisely, when developing their resources they have in mind the international strategies they want to pursue and act accordingly.

These firms consider internationalization as a three-dimensional process (Onetti et al., 2012):

- a *multidimensional process*, because resources and specific assets have to be managed at an international level;
- a *relational process*, characterized by cross-borders relationships;
- a *knowledge base augmenting process*, where learning flows in the global environment, allowing firms to improve their competences and to exploit their innovations internationally.

Pittiglio et al. (2009) analysed the influence exerted by internationalization on the innovation activities of enterprises. From a review of the literature, the authors identified the following main outcomes:

- new ideas and skills from different markets and cultural perspectives that can support and complement the limited internal resources;
- wider range of potential buyers ;
- improved technology level of firms linking technological upgrades with firm survival in a wider and more complex competitive environment;
- higher productivity and manufacturing efficiency thanks to learning from global buyers and purchasing agents and other international collaboration agreements.

All these effects suggest that networking represents a successful strategy also as regards the internationalization process of firms.

#### 2.4.2 Networks of innovators

Coviello and Munro (1997) analysed the chronological internationalization process of four New Zealand SMEs operating in the software industry. They noted that SMEs' globalization emerges from a pattern of behaviour influenced by different network relationships. In particular, by acting collectively, individual firms share their opinions, expertise and knowledge and therefore more informed decisions are taken. In addition, they observed that the larger partner determines the evolution of the global strategy. Moreover, because of these relationships small firms were able to establish their presence abroad within three years. Authors thus concluded that

networks have a beneficial role in preventing wrong strategies and driving, facilitating or inhibiting the development of foreign markets for SMEs.

Later, Zain and NG (2006), conducted a study over four Malaysian software SMEs. Authors started with a brief review of the literature with the aim of identifying how collaborations impact on collaboration processes and then they empirically investigated their effective presence. Findings confirmed nearly all the theorised factors and thus authors provided a list with the benefits that network relationships provides to SMEs when going abroad. Firstly, it increases motivation and reduces reluctance to explore foreign markets. Secondly, it gives more possibilities for the selection of the exporting countries, by sharing costs of market analysis and by exploiting previous experiences of partners. Thirdly, if the partner has already established distribution channels, the firm can easily share it reducing the associated costs and the risk of choosing the wrong distributor. This is a valuable aspect, especially in developing countries, where the legislation is often weak and complex and it is easy to find unreliable partners. In addition, alliances with already-recognized firms help build credibility and trust in the business environment, which is an important starting point to establish a solid international presence. Moreover, networks are often seen positively by buyers, because they can capture advantages of reduced transaction and search costs.

Another important benefit of internationalization is the possibility to spread the risks associated with the fluctuations of markets and the acceptance of products. Joining an already globalized network allows a nearly immediate internationalization. Collaborations also help mitigate the negative country-of-origin perception, a problem which regards mainly companies from developing and under-developed countries. Ciravegna, Lopez and Kundu (2014) interviewed 58 high technology SMEs (28 from Costa Rica and 30 from Italy). Costa Rican respondents confirmed that collaboration with foreign actors can be useful to improve negative perceptions associated with their country-of-origin. Instead, Italian firms did not consider their origin as an influential factor for their globalization strategy; again confirming in this way the argumentations above presented. Finally, SMEs often engage in alliances to share the costs of international fairs and marketing

campaigns. It can be thus concluded that networks make easier and faster the internationalization process of SMEs.

Small size and flexibility render SMEs a fertile ground for internationalization. However, they possess also constraints that obstacle their development. For example, Tiwari and Buse (2007) analysed the difficulties faced by Hamburg's SMEs in reaching the global market. In a survey among 70 firms, they identified the following main reasons (numbers within brackets identify the scores given by firms in a value scale 1-6, where 1 means highly important and 6 not important):

- focalization on the home market and consequent difficulty in changing mentality (2.8);
- lack of necessary resources (3.2);
- lack of fundamental skills (3.3);
- complexities related to the legal infrastructure (3.3);
- fear of loose proprietary knowledge (3.6).

Thanks to networks many of these obstacles can be overcome. For example, firms' resources can be channelled through both horizontal (competitors and collaborators abroad) and vertical (foreign buyers and their customers, agents and suppliers) network actors, who provide additional information, learning, financial and other related assets for global ventures (Knight and Evers, 2012). Moreover, an international context increases creativity and improves efficiencies by learning and applying foreign practices. As regards R&D activities, new useful alliances can be established with local suppliers, universities, research centres and other competitors. In addition, concerning the appropriability problem, a certain degree of internationalization is fundamental to limit the risk of losing returns from proprietary innovations (Kafourous et al., 2008). Actually, the availability of many different markets makes the initial investments more likely to be recovered, by applying different prices in order to obtain higher returns and reduce the risks that might arise in a single specific area. Finally, SMEs can manage complexities by collectively hiring consultants, thus reducing related costs that can be too high for a single company.

SMEs' networking for internationalization can also have some drawbacks:

- when the internal knowledge is poor and there is a high risk of outgoing spillover, a certain degree of centralization is however necessary in order to protect corporate technologies;
- coordination and monitoring costs can be higher due to differences in language, culture and habits;
- communications difficulties may arise due to the geographic distance and the underdeveloped infrastructures;
- depending too much on a network could represent a constraint for a firm's development;
- an unbalanced investments of assets can seriously affect the solidity of the firm.

Coviello and Munro (1997) talked about the development of these networks. In particular they underlined that sometimes SMEs simultaneously adopt multiple and different modes of entry in the global market. In addition, firms initially externalize some activities, in order to minimize the financial and market risk during the expansion phase. However, once entered, firms usually establish separate facilities to decrease reliance on their partners and once they start experience market success, they try to establish greater control over the network. These behaviours may obviously affect the survival of collaborations, thus reducing trust and increasing disputes.

Therefore, it can be concluded that there is a tight interrelation between innovation and internationalization which are simultaneously pursued to reach high-value goals. This is a very valuable opportunity for SMEs, which can form alliances to overcome their constraints and exploit these advantages. However, it is also a risky strategy with drawback and therefore careful evaluations are always necessary to avoid undesired consequences.

In this chapter the advantages firms aim to capture by collaborating and the common goals they pursue were presented. Innovation and internationalization,

were analysed to underline their relevance for SMEs and to understand how networks can concretely support the development of these two strategies.

Starting from the conditions that foster the formation of networks, the third chapter will explain how they are formed and the possible trajectories that can arise during collaborations. Argumentations will be also pointed out to clarify that alliances are not always the most suitable form of organization and that sometimes other arrangements have to be preferred.

## Chapter three

### THE GENESIS OF NETWORKS

#### 3.1 Critical conditions that encourage networks' formation

As it can be derived from the second chapter, some of the advantages that SMEs can capture from alliances depend on the presence of specific elements. I will follow the argumentations provided by Powell (1990) to explain this point. In particular, he identified three critical conditions that foster the formation of networks: know-how, demand for speed and trust.

#### Know-how

Almost all market analysts would agree that customers worldwide increasingly ask for extremely customized goods and services which allow them to live better and improve their social status. Consequently, manufacturers have to perform highly skilled tasks to satisfy this heterogeneous and fussy demand. These require multidisciplinary capabilities to be fulfilled and a long period of training and practice to obtain the expected quality standard (Powell, 1990). This is why such jobs are typically characterized by the predominance of intangible assets over tangible ones. Hence producers need to possess a well-developed know-how, which is difficult to codify and which embeds their personal experience and creativity (*ibidem*). For this reason, they rarely agree to tie their precious contribution to the want of other people within a hierarchical structure and therefore choose to act independently. Moreover, they need to know who possess the complementary skills useful to provide customers with the finished high-valuable goods or services (*ibidem*). In fact, it is nearly impossible for a single firm to perform all the different tasks at best.

Therefore, when there is the need to perform many different skilled tasks, networks appear more suitable because allow communication, fair exchange of information, reciprocal collaboration and put together widely dispersed specific knowledge. This means that, while within markets tangible (and often tailored) assets are exchanged, networks appear more suitable for intangible ones. In addition, it is difficult for

external actors to appropriate such know-how, because of the regular interactions and the reciprocity of exchanges (*ibidem*).

This is the reason why the biomedical district in Emilia Romagna is a European leader. It has been able to supply a full range of high-quality medical components and customize them according with customers' needs (source: [www.osservatoriodistretti.org](http://www.osservatoriodistretti.org)).

### Demand for speed

A constant updating with the last technologies and a rapid action in the market are fundamental when the industry is characterized by high competition and/or fast technological change. Obviously, this requires continuously new resources (such as machineries, materials, utilities, money, know-how and skills) that rarely a single firm possesses, especially a small one. Therefore, enterprises who face these complexities are encouraged to look for partners with complementary products or similar needs and with universities and research centres. Their aim is to rapidly provide customers with highly performing products in order to share production costs and to reduce the risk of developing costly innovations with a short life cycle. In these cases networking is almost an obliged choice, since internal development would take too much time to acquire all the necessary resources and capabilities. In addition, it also increases the probability to succeed in the market, since it gives access to the results of several years of experience. Moreover, in the case of SMEs, they neither possess the necessary means nor can make huge investments to develop uncertain technologies. Actually, this would create a serious imbalance that would be difficult to recover.

All these considerations bring to support the thesis by Powell (1990), who noticed that the current business environment rewards the typical strengths of networks, i.e. flexibility, rapid access to a wide range of specific information and high customization. In particular, regarding speed, alliances are more suitable than market and hierarchy because they can rapidly disseminate, interpret and transform new information. Rather, if competition is on prices for standard products, networks appear less suitable, since each actor would play independently and refuse sharing any information.

Countless are the empirical examples where collaboration has proved to be the best solution to rapidly respond to market needs. Among these, one of the most famous is the network including the Californian giant Apple, which was able to rapidly reach the leading position by focusing only on its strengths thanks to alliances (Ozcan and Eisenhardt, 2009).

### Trust

Once actors decide to collaborate, they need to trust their partners to share their heritage. In fact, lack of trust obstacles the exploitation of the above-mentioned benefits, as have happened in some Italian industrial districts (Cedrola, Battaglia and Tzanni; 2009).

Scholars have identified some circumstances which encourage trust formation. For example, firms often establish long term relationships to accomplish their projects and this frequency of interactions increases the availability of partners to collaborate. In addition, as noted by Axelrod and Hamilton (1981) when it is likely that future contacts occur, people are more inclined to cooperate and also to punish who act unfairly. Moreover, opportunistic behaviours in collaborative arrangements are discouraged and monitoring is constant and more effective, since it is done by peers who are competent in judging others' activity (Powell, 1990). Within such context often friendship relationships arise and this in turn reduces the need to formalize agreements and also the number of legal disputes (*ibidem*). However, this is true in the extent that some degree of homogeneity among actors occurs. In fact, common culture, ethics, ideologies, education or similar factors favour trust and thus cooperation. This is why formal arrangements are recommended when these features lack and no form of homogeneity exists. (Walker, Kogut and Shan 1997; Karaev, Koh, Szamosi 2007; Ceci and Lubatti, 2012).

Another important aspect is that actors who want to build trust usually pay much attention to quality. Actually, making a good impression to the partner means acquiring its esteem and building a solid reputation: a symbol of reliability and a passport to engage in further collaborations (Powell, 1990).

An interesting point raised by Powell (1990) is also the importance of institutions. In fact, according with the author, legal, political and economic factors have an

influence in collaborations. Even if he is not confident about which factors are useful, Powell (1990) suggests skilled labour, level of employment, mechanisms for job-training, equity among actors, legal system with antitrust standards, policies that encourage research and development as critical factors that institutions can affect. It seems reasonable to add to this list the following elements: efficient infrastructures, incentives and information about facilities and possible economic benefits to which firms can benefit.

Dwivedi, Varman and Saxena (2003) analysed the importance of trust in SMEs networks. By a qualitative review of the literature on this topic they affirmed that specialized institutions, business associations, local governments and personal interactions are important ways to build trust and start new collaborative arrangements.

Therefore, the presence of trust among actors is useful to help firms to form networks. In particular, this is the case when firms need to build long-lasting alliances, to frequently interact with partners, to build a solid reputation in the market, to avoid complexitie sand high costs (Molina and Morales, 2010) brought by formalization or simply to benefit from facilities given by institutions to networks.

As regards SMEs, a successful example comes from the wine district in the area of Cuneo (Piedmont, Italy). The different SMEs has been able to cooperate successfully in order to obtain the largest turnover in 2013, compared to the other national collaborations, and has registered the second largest sales in China in the same year (source: Il Sole 24 ore, 23rd October 2013).

### 3.2 How networks evolve over time

For a complete overview of the networking phenomenon, the evolution of networks over time is now explained.

In the previous chapter I presented three conditions that constitute a fertile ground for the formation of networks. Starting from such elements, scholars in the past saw a unique path in the evolution of collaborations: at the beginnings, ties between interdependent firms were formed (Powell, Koput and Smith-Doerr, 1996) and then

they evolved through the formation of new ties between interdependent firms embedded in the same network; exploiting in this way the collaboration to identify a limited range of new possible partners (Gulati and Gargiulo, 1999). Following this approach, researches assumed that initial resources and ties determined the development of collaborations (*ibidem*) and also the size of the network (Milanova and Fernhaber, 2009). A crucial consequence of this last observation is that initial partners determine the pattern of future available resources. Later, other authors started considering that, as environment becomes uncertain and existing technologies obsolete, firms might deviate from the initial path and take into account also collaborations with companies not embedded in their same network (Koka, Madhavan and Prescott, 2006).

Another contribution to the theory on alliances formation comes from the empirical research conducted by Ozcan and Eisenhardt (2009). They analysed six rival entrepreneurial firms in the U.S. wireless gaming industry. Interestingly, they observed some conditions that brought to both the formation of portfolios with high-performing attributes and the achievement of high firm performances:

- alliances with firms with unique roles and interdependencies within the industry, and not with the most successful partners in the industry;
- networking with disconnected firms. Actually, these collaborations appear more solid because they increase the number of potential partners, make more likely the formation of new different outputs and reduce the risk of overconfidence about the level of embeddedness in the network;
- establishment of multiple ties to manage the risk related to uncertainty and to leave many opportunities open to resolution. As regards the management of the different ties, they observed that firms continuously communicated with all partners while focused in particular to whom they were currently operate: in this way, they maintained a perception of constant relationship with partners.

This last point is considered by authors a powerful way to balance a high number of ties and their strengths.

Another interesting approach comes from Kilduff and Tsai (2003). They explained that network evolution is based on goal-directedness and serendipity, i.e. two processes which originate two different collaboration trajectories. The first process regards alliances where partners collaborate together to reach well-established goals. For this reason, the presence of a broker is a commonplace. Rather, the second process is originated from interactions among actors, without a previously agreed purpose or strategy.

More precisely, goal-directed collaborations are formed to achieve a specific target and end when such objective has been reached. The coordination is centralized, members are clearly defined, have similar features and trust each other. Conflicts seriously affect the duration on the collaboration.

On the other side, serendipitous processes do not have a predetermined purpose and are naturally formed through ties: this is why they evolve slowly but are likely to persist over time (the formation of alliances depends is not strictly related to strategic needs). The dominant driver is serendipity. There is not a single leader and trust is considered a fundamental element.

Of course, these are only two ideal-type trajectories which are identified through some peculiarities: in the real life, networks present hybrid evolution routes with characteristics of both trajectories. Even goal-directedness and serendipity can alternate themselves. For example, alliances can origin to pursue a precise goal but, once it has been reached, friendship linkages can persist and a serendipitous evolution path can emerge. It can last over time and be substituted at any time by a goal-directed path if new goals arise.

Combining these theoretical contributions, I can conclude that firms have to try to adopt a broader approach when looking for partners to establish alliances. Actually, collaborations with different actors have proved to bring to higher-performing results. Furthermore, companies have also to be aware that alliances can persist when a goal has not been established or when it has already been reached. In fact, as noted above, maintaining interactions with other companies is a strategic behaviour.

### 3.3 When networks are not the best form of organization for firms

By looking at the advantages and benefits presented in this dissertation, one would find unreasonable that firms are not all organized in networks. Nonetheless, given the existence of alternative forms of organization, we should infer that there are some cases in which they are not the best solution or it is not possible to form alliances. In reality in fact, networks are not a panacea and there are some cases in which other forms of organizations have to be preferred.

At this regard, Podolny and Page (1998) identified three factors that potentially affect the adoption of networks: weaknesses, competition at the time of funding and national features.

#### Weaknesses

The literature is plenty of authors who affirm that firms organize in networks when they are too weak for going solo (such as Mort and Weerawardena, 2006; Musteen, Francis and Datta, 2010; Xie, Zeng and Tam, 2010; Hessels and Parker, 2013). Obviously this not a precondition: in the second chapter the different advantages that companies can reap for the mere fact they collaborate were presented.

Nevertheless, this dissertation started by arguing that firms use networks to overcome their constraints. Actually, when they have the possibility, firms often decide to going solo. Following Shilling (2010), there are several reasons to choose this last strategy: no distribution of returns from unique capabilities, protection of proprietary technologies, monitoring both of the development path and the adoption of such technologies by consumers and finally opportunity to renew and enrich internal capabilities rather than outsourcing to others.

Considering these opposed approaches, it can be concluded that the decision of networking or not is the result of a trade-off between going solo and collaborating. Again, as underlined above, each firm has to make its own evaluations carefully before partnering with other companies. Nonetheless, when weaknesses appear too high to be overcome in a reasonable period of time, as the two authors argued, alliances represent an obliged choice for firms to stay competitive.

### Competition at the foundation of the company

Podolny and Page explained this point starting from the advantages of the first mover in an industry, i.e. brand loyalty, investment in new technology development, pre-emption of scarce assets and buyers' switching costs (Shilling 2010). When firms are pioneers in an industry and adopt a vertical integrated structure, it is difficult for them to reorganize and exploit the advantages brought by new more flexible forms of organization. Consequently, they are constrained in their vertical structure without the possibility to ally with others.

### National features

It is well-known that culture strongly affects people behaviour and their propensity to collaborate. Therefore, collectivist cultures encourage the formation of networks (Podolny and Page, 1998). In the same way, particular legal arrangements can influence alliances. For instance, this was an important driver for the development of Italian industrial districts. When, on the contrary, an individualist culture dominates or when the legislation does not favour collaboration it is less likely that networks arise.

#### 3.3.1. Other obstacles to the formation of networks

Powell, Koput and Smith-Doerr (1996) added other elements which presence discourages the formation of networks, such as lack of trust, difficulties in monitoring, coordination problems, different learning abilities. In addition, they identified frequency of interactions as another deterrent, since it can create confusion about who is an ally and who is not. Finally, they affirmed that partners have to consider also their position in the value chain, the level of technological sophistication, the resource constraints and their experience in previous alliances before taking decisions.

All the considerations made in this paragraph should suggest that entering a partnership means the acquisition and improvement of skills and resources but presents also some drawbacks. The particular environment in which a firm is embedded or its distinctive features can determine whether networking is a

recommended or if it is better for the firm to going solo. Companies thus have to be aware of the importance of wise evaluations in the foundation phase to avoid problems in the future.

In this chapter an analysis of how collaborative forms arise was presented. First of all, know-how, demand for speed and trust are three factors which constitute a fertile ground and thus led to the alliance among actors. Secondly, it was demonstrated that initial partners play an important role in determining the development path of a network but changing this imprinting is of fundamental importance to preserve competitiveness. Finally, some factors were presented to explain that networks are not always the best solution for SMEs, as previous chapters may have wrongly suggested.

In the next chapter the way in which companies cooperate to reach network goals will be presented.



## Chapter four

### THE GOVERNANCE OF NETWORKS

In this dissertation the concept of governance is intended as a synonymous of coordination, following in this way the approaches proposed by many authors, such as Powell (1990), Jones *et al.* (1997), Provan *et al.* (2007), and Müller-Seitz (2012).

#### 4.1 Trust, embeddedness and cooperation

A fundamental economic assumption is that market transactions are regulated through the price, which incorporates all the necessary information that brought the demand and the supply sides to reach an agreement. Nevertheless, there are some cases in which prices cannot be applied and thus other mechanisms have to be adopted to regulate interactions. Networks are a typical case.

The topic of alliances governance has been debated for a long time among scholars. One of the first authors who worked on it was Williamson (1975), who used the transaction cost economic theory to state that within networks trust plays a fundamental role in regulating interactions among actors.

Many authors have welcomed his idea. For example, Klijn, Edelenbos and Steijn (2010) employed his position to explain the importance of trust as a mechanism of coordination for leveraging innovation in relationships among peers. Actually, according to Williamson's theory, innovation should be performed in vertically-integrated firms which can develop their own new combinations and, in case of success, reap all the advantages obtained from their efforts. However, as stated at the beginning of this dissertation, companies (especially SMEs) usually do not possess all the capabilities necessary to react quickly to market changes with new solutions and thus they often form networks to preserve competitiveness. Therefore, in these contexts trust has a critical role in discouraging opportunistic behaviours and enabling innovative activities even when vertical integration does not apply. Klijn *et al.* (2010) found evidence of the reliability of this theory by

collecting personal experiences from 337 people involved in alliances in the Netherlands.

Another interesting work confirming the importance of trust in governing networks was conducted by Mellewigt, Madhok and Weibel (2007). They tried to investigate cooperation among firms in presence of specific investments, which are particularly exposed to opportunistic actions by partners. Scholars found that in such cases trust exerts the key function of mitigating the need of strict contractual arrangements and consequently allows both a reduction of transaction costs and a better cooperation among partners, in line with the needs of network relationships.

However, other scholars expressed their criticism concerning a strong relying on trust to govern alliances. In particular, they usually expressed scepticism about the formation process, considered as complex and dependent on both past experience and social norms (Yoon and Hyun, 2010).

In 1985 the American scholar Granovetter published an article in which he asserted his disappointment in conceiving actors pervaded of a general sentiment of morality which pushes them to trust each other. Rather, to explain how actors effectively interact within networks he used the term “embeddedness”, defined as “the argument that the behaviour and institutions to be analysed are so constrained by ongoing social relations that to construe them as independent is a grievous misunderstanding” (1985: 481-482). According to the author, trust is formed and opportunism is discouraged because of the personal relationships that occur within collaborative structures. Therefore, according to Granovetter, interactions within networks are created because actors are part of the same structure and have expectations as regards their partners’ actions and behaviours; thus not because of they are confident about a sentiment of morality that members generally possess.

Lin *et al.* (2009) conducted a study to understand how Taiwan SMEs exploited network advantages to improve technology transfer among them. They found that the more firms are embedded within the network, the more they are likely to build strong ties, increase trust among each other and realize an efficient technology transfer.

In 1996 Uzzi published an interesting article in which he aimed to improve the concept of embeddedness. In particular, he used as example an empirical case about an American manufacturer who was going to transfer his production to Asia. He demonstrated that the manufacturer was able to preserve the quality of goods sold into his shops thanks to embeddedness, which allowed him to be confident as regards the behaviour of the shop owners. Thus, he demonstrated that “once embedded relationships form, firms continue to cooperate even after the endgame obtains” (1996:682). The author then concluded his work by summarizing his main thesis: “embeddedness is a logic of exchange that shapes motives and expectations and promotes coordinated adaptation. This logic is unique in that actors do not selfishly pursue immediate gains, but concentrate on cultivating long-term cooperative relationships that have both individual and collective level benefits for learning, risk-sharing, investment, and speeding products to market” (1996:693).

Uzzi’s work was later criticized by some scholars. For example, as far as endgames are concerned, Montgomery (1998) affirmed that players always defect, whereas according to Uzzi partners cooperate even in endgames. Actually, he explained that cooperation occurs only if partners become friends, which is not an immediate condition in business interactions.

#### 4.2 Formal contracts to support trust

Firms have proved to be sometimes reluctant to establish new partnerships with unknown partners, even if they promise attractive gains. Lazzarini *et al.* (2008), suggested formal contracts as mechanisms to incentive such behaviour. Actually, they can limit the possible losses that might occur in case of opportunism from partners (*ibidem*). Moreover, they are useful to define the general terms of the economic exchange, its object and the rights and responsibilities of parties (*ibidem*).

More interestingly, Lazzarini *et al.* (2008) stated that one of the most appealing advantages of formal arrangements is the fact that “even when the exchange is subject to hazards, contracts may facilitate greater mobility because individuals will perceive lower downside risk in newly formed exchanges and thus be more likely to

engage in transactions with strangers” (2008: 713). This means that contracts represent an incentive to collaborate even when trust is absent and uncertainty is high, since they provide a legal insurance over opportunistic behaviours.

However, as authors argued, contracts are useful mainly when the exchange requires a relevant commitment by parties. In fact, lower involvement of assets would bring parties to avoid this coordination mechanism because of the complexities and costs it implies.

#### 4.3 The power of learning by monitoring

The concept of embeddedness proposed by Granovetter and the tight relationships among partners it implies, can be linked with another governance mechanism, that is, learning by monitoring.

Helper *et al.* (2000) published an article in which they tried to clarify an apparent paradox in the literature, i.e. the incompatibility between the necessity of vertical integration to avoid the appropriability of proprietary rights and the increasing phenomenon of vertical disaggregation. They solved the trick by arguing that members can implement some techniques, called pragmatic mechanisms, which enable collaboration within networks even when significant levels of trust are absent. Authors explained that learning by monitoring is effective since it “creates an information symmetricizing machine in which actors must keep one another abreast of their inventions and capacities” (2000: 472).

The pragmatic mechanisms indicated by the scholars are: benchmarking, simultaneous engineering and root cause. The first means that specific feasible performances considered as satisfying are taken as a reference point with which similar actions performed within networks have to be compared and then evaluated. The second mechanism consists in proposing variations to the existing benchmark with the aim to produce benefits, such as reducing production costs or improve performances. Usually modifications are supported by detailed analysis, where all the related implications are taken into account and where each cost is related to its functionality (Helper *et al.*, 2000). The aim is to highlight differences in

performances and thus to stimulate a debate among members in order to realize improvements. Authors stated that the repeated interactions to refining goods were both the mean and the scope of the collaboration and moreover they ensured a constant reciprocal monitoring. Furthermore, in this way trust is created without the need of long term relations. The third mechanism, i.e. root cause, consists in identifying the real factor which has caused the problem (MacDuffie, 1997). In this connection, also discovering even the most unlikely sources of the problem - a procedure called 'five why's' - is usually recommended (MacDuffie, 1997; Helper *et al.*, 2000).

Another important role of learning by monitoring (highlighted by Helper *et al.* (2000)) is its ability to align the different interests of members. In fact, the constant supervision of partners' activities and the use of benchmarking practices avoid the risk of obtaining scarce efforts from partners (unsatisfactory outcomes are immediately detected before that serious undesired consequences are produced) and allow a fair gains' distribution. All these features make learning by monitoring a strong incentive for engaging in alliances. Furthermore, the characteristics of this governance mechanism render collaboration with partners appealing as from the beginning, thus overcoming the necessity of enduring interactions claimed by many theories on network effectiveness (*ibidem*).

Nevertheless, in an attempt to provide a complete overview of the topic, Helper *et al.* (2000) raised also the problem that these structures do not always work. For instance, they presented the case of the American automobile industry to affirm that partners can be tempted to behave opportunistically when environmental conditions change, even in presence of pragmatic mechanisms. This also means however that subsequent changes can induce firms to reconsider their strategies and restarted pragmatic collaborations.

#### 4.4 The role of brokers

In this paragraph the figure of broker will be presented. A broker could be an individual or an organization with the important role of "building bridges and being

highly involved” (2010: 376) in already-established networks. As noted by Klerkx and Leeuwis (2009), they can be useful especially in the earlier stages of innovation development, when uncertainties and potential risks may discourage the generation of new valuable combinations.

In their analysis of the Dutch agricultural sector, brokers proved to be “innovation catalysts, by fulfilling the tasks of demand articulation (with different time horizons, levels of system aggregation, and complexity of innovation, i.e. incremental, radical, or system innovation), finding suitable cooperation partners in innovation processes (who may be both R&D and knowledge intensive business services providers and other parties) and forging a connection with these actors, and facilitating interaction during the innovation process” (2009:856).

The literature concerning these figures is scarce and has developed recently. However, this is not strange considering both the delay with which studies as regards networks have developed and the fact that brokers have emerged in response of difficulties emerged from these alliances. Actually, SMEs need to increase their flexibility and cooperate with the aim to acquire new information while specializing in specific capabilities. However, sometimes they lack the necessary background to reap the flow of knowledge within networks, especially if interactions occur among heterogeneous partners (Kirkels and Duysters, 2010). In such situations, brokers can play a strategic role in supporting companies to efficiently operate in these dynamic interactions (*ibidem*).

A crucial point raised by scholars is that the actions undertaken by such intermediaries depend on their goals and interests (*ibidem*). Thus it can be derived that, when brokers are involved, they influence the activities undertaken by members and thus the development path of the network.

Interestingly, researches also demonstrated that contributions from universities or other public institutions are not considered by SMEs as useful as the ones coming from private organizations within the network (*ibidem*). Furthermore, the study conducted by the authors highlighted that the public and scientific sectors provide the most valuable intermediaries, whose presence is increasingly necessary to cope with the new complexities which characterize the current business environment.

Therefore, a natural conclusion of the study conducted by Kirkels and Duysters is that SMEs should participate to projects where they can interact with non-profit organizations and should choose skilled intermediaries if they perceive to underperform.

#### 4.5 Governance types

One of the most relevant classifications of governance forms is the one which distinguishes between brokered and not brokered forms.

When intermediaries are absent, the decision-making authority is decentralized and network coordination is performed by all the members; hence, in this case scholars use also the term 'shared governance' (Provan and Kenis, 2008). On the contrary, if there are intermediaries decisions are more centralized and there is a firm or a group of them appointed to organise network activities, while interactions among member firms are nearly absent. Of course, these are only two extremes of a series of coordination forms.

Another taxonomy proposed in literature differentiates between participant-governed and externally governed networks. In the following paragraphs, three main examples derived from this last distinction will be presented.

#### Participant governance

This way of coordinating collaboration activities is highly decentralized. Actually, this is the above-mentioned case of shared governance, in which the commitment of all partners is accomplished by an equal influence on the decision-making process (Provan and Kenis, 2008). Coordination can be obtained both formally and informally (*ibidem*). In the first case, meetings can be organized and some members can act as representatives. Otherwise, each member performs the activities he considers as useful to reach network goals, without necessarily consulting with others (*ibidem*). The strength of shared coordination is the degree of flexibility and responsiveness it gives to the needs of the members or the market (Kenis and Provan, 2009). Nevertheless, the authors themselves warned that sometimes shared governance can lead to inefficiencies, thus suggesting the adoption of a more

centralized approach (a deeper focus on the efficiency of governance forms will be presented in the next chapter).

#### Lead organization

This is the case when partners choose to appoint a member (or a small group of them) as leader of the alliance. Whose task is the fulfilment of all the activities necessary to reach the goals of the network. More precisely, it exerts administrative functions, takes decisions at network level and supports partners in reaching agreements concerning the collaboration (Provan and Kenis, 2008). Furthermore, it manages the funds of the alliance, receives contributions from partners and seeks grants from external institutions (*ibidem*). This leading role sometimes can be given to a precise member company because of the specific strategic resources or legitimacy it possesses (*ibidem*). Therefore, considering all these information, it can be concluded that the main benefit that pushes networks to adopt this second type of coordination is an increase in both efficiency and legitimacy (Kenis and Provan, 2009). However, partners have to be aware that “the lead organization may have its own agenda and can readily dominate the other network members, causing resentment and resistance. In addition, because the lead organization takes on many of the activities of governing the network, network members can readily lose interest in network-level goals and focus instead on their own self-interest, undermining the viability of the network.” (2009: 448).

#### Network administrative organization (NAO)

This is the case when an external entity is established with the specific scope of coordinating the collaboration and its dynamics (Provan and Kenis, 2008). This is a centralized governance form, even if members interact among each other, at least to appoint the NAO. This intermediate can be a for-profit company, although it is usually a government or non-profit organization (*ibidem*). NAO governance form is more diffused than the other two above-presented because it usually combines the benefits of efficiency and sustainability with the prevention of dominance by a member firm (Kenis and Provan, 2009). Scholars however cautioned that partners could rely too much on the NAO organization, which may also increase bureaucracy and, in turn, decelerate network responsiveness (*ibidem*).

The choice of adopting a specific governance form depends on the goals that partners aim to accomplish and on the particular features of the alliance. This is why there is not a coordination type that can be considered as superior with respect to another. In any case, this is an important choice which can have several impacts on the collaboration, such as on its development and effectiveness. Hence, a careful evaluation has to be performed before deciding which network form is to be adopted. Furthermore, a constant monitoring would help detect on time whether an inappropriate form has been implemented and would therefore allow to change the way of coordinating activities before suffering important detrimental effects.

In this chapter it was presented how literature has tackled with the problem of network coordination. Then, the three most common types of governance forms were highlighted, explaining which circumstances favour the adoption of a form over another.

In the following chapter, the linked topic of network effectiveness will be proposed. It will be demonstrated that there are both specific features that constitute a fertile ground for a determined coordination form to arise and also some features that can have detrimental influence of the particular form adopted. More interestingly, the role of individuals will be underlined as highly influential to shape the development path of alliances.



## Chapter five

### ARE THE INITIAL PURPOSES ALWAYS REACHED?

#### 5.1 The importance to choose the right form of governance

In the previous chapter the importance to adopt a proper form of governance has been underlined. In fact, if networks are well coordinated, dysfunctional situations caused by actors' actions and interactions can be avoided.

In addition, an appropriate governance form allows to fully exploit the advantages of networks (see chapter 2) and thus to reach easily and rapidly the predicted outcomes.

However, this does not always happen and alliances can also result in poor performances. 'Ineffective collaboration' or 'network failure' are common terms to express these circumstances. According with Shrank and Whitford (2011), they can be defined as "the failure of a more or less idealized set of relational-network institutions to sustain 'desirable' activities or to impede 'undesirable' activities" (2011:155).

The literature as regards this topic is scarce and sometimes contrasting: some authors attribute failures to organizational problems while others suggest governance drawbacks as probable causes.

Starting from this last reason, the argumentations presented by Provan and Kenis (2007) will be proposed to identify the crucial factors that can predict whether a governance structure is inappropriate and can have detrimental effects on collaboration effectiveness. It must be noted that these considerations explain which elements have to be considered to understand how the adopted governance structure naturally influence the development of a collaboration. Thus, this approach do not take into account the impact that actors can have in shaping this predicted path. Later, the crucial role of this last point will be underlined to fully assess the effectiveness of the network and therefore to determine its success or failure.

## 5.2 The predictors of network effectiveness

In the fourth chapter the conditions which make a specific form of governance suitable were presented. This means that choosing how to coordinate networks is not simply the result of a mere decision, but in most cases it is guided by the existence of precise circumstances.

Nevertheless, some networks are administered in an inappropriate way for various reasons. For example, past experience of members with a specific governance form may induce them to replicate it without considering any differences (Provan and Kenis, 2007). Moreover, sometimes a specific type of coordination is mandated and there is no possibility to change (*ibidem*). Other times, network features are not correctly evaluated and thus the wrong decision is taken.

The authors suggested four key predictors of network effectiveness: trust, number of participants, network goal consensus and need for network-level competences.

### Trust

To investigate how trust influences effectiveness, it has to be taken into account the degree of reciprocity (Provan and Kenis, 2007), that is, the degree to which partners trust one another. Obviously, this is a fundamental ingredient of each network but in particular in shared governance, where it can be considered the engine that pushes partners to honestly collaborate and therefore that brings the network to success (*ibidem*).

As regards this point, Krishnam, Martin and Noorderhaven (2006) conducted an interesting study over 126 international strategic alliances operating in India. Scholars found that the impact of trust on network performances depends on the unpredictability of both partners' behaviour and external factors, which however have an opposite effect on network effectiveness. In particular, mutual trust contributes to reduce uncertainty about collaborators' behaviour and thus has a positive influence on network effectiveness, which actually increases as interdependence and competition among members grow. Furthermore, a high degree of trust improves the perception of reliability concerning information received from partners. This, in turn, makes the firm more vulnerable to unforeseen

events, when it needs a rapid reaction and thus it cannot evaluate whether the information it possesses is accurate. This is why authors considered this confidentiality as detrimental to ensure network performances. Nevertheless, in this connection Lee and Cavusgil (2006) proposed additional positive considerations. Specifically, scholars affirmed that reciprocal trust is useful in situations characterized by high environmental uncertainty (i.e. uncertainty as regards an external factor), such as in high technology sectors, because it allows a certain degree of governance flexibility while preserving effectiveness. Such different explanation makes the two previous points both reasonable.

Thus, if trust is not pervasive among members, it must be adopted a brokered form of governance to preserve effectiveness (Provan and Kenis, 2007). Similarly, within brokered forms, more attention has to be given to the NAO type, where members have to collaborate to control the leader and therefore they have to maintain a close contact with each other (*ibidem*).

#### Number of members

Participants' full control over the collaboration means that all of them should take part in the decision-making process. For instance, in shared governance members can directly discuss decisions and each entrepreneur has the possibility to express its opinions.

However, as it was pointed out in the previous chapters, any new member can bring a lot of new contacts to the network and this exponential growth of decision makers renders more difficult to reach an agreement (Provan and Kenis, 2007). For this reason, in big networks a brokered governance have to be preferred to ensure effectiveness (*ibidem*).

Of course, 'big' is not an objective value and scholars have made few attempts in trying to clarify this point. Actually, from a brief review of the literature (Zakocs and Edwards, 2006; Turrini, Cristofoli, Frosini and Nasi, 2010) it seems that no authors give a precise number of participants that can be accepted to preserve network effectiveness, probably because it depends on different factors, such as the development stage of the network (Turrini, Cristofoli, Frosini and Nasi, 2010) or the

extent to which trust is pervasive among members (Provan and Kenis, 2007). Thus, it can be concluded that it is necessary a constant monitoring of effectiveness to assess whether the presence of coordinators has become necessary.

Nevertheless, this information has to be considered not for its value, which obviously varies according with the specific network considered. Rather, it simply has to give the general idea that only very small networks can be coordinated by all the members and that often a brokered form has to be preferred. Again, as this number increases, even the lead form becomes unsustainable, while the NAO type can still ensure effectiveness (*ibidem*).

### Goal consensus

Before starting explaining the relationship between goal consensus and network effectiveness, it has to be remarked that within networks there are goals both at the network level and at the firm level. The former is fundamental for guiding activities of networks while similarity in goals at firm level may even be detrimental for the collaboration (Provan and Kenis, 2007). In fact, consensus on network purposes increases motivation and cooperation among partners. On the contrary, similarities on the goals at firm level may result in competitive pressures and thus into scarce collaboration efforts and poor information sharing (*ibidem*).

An interesting work concerning this topic comes from Whelan (2016). He interviewed 20 agents which collaborate among each other for the protection against terrorism in Australia. He discovered that informal ties have an important role in solving conflicts caused by the absence of goal consensus.

Shared governance and NAO, of course, require acceptance on goals at the network level while in the lead form a slight disagreement can exist, since the lead organization has the role of taking the final decision (Provan and Kenis, 2007).

However, it is clear that absence of agreement cannot be a long lasting situation, at least for the costs it implies (in terms of scarce network performances, time loss and involvement of actors with a mediating role) and that in the long run it can bring to the end of the collaboration (Kilduff and Tsai, 2003; Provan and Kenis, 2007).

Finally, Provan and Kenis (2007) raised the point that accord among members as regards network purposes does not necessarily mean that parties agree even on the actions to undertake to reach these goals. This is another aspect that, even if with a fewer extent, can affect effectiveness.

#### Need for network level competencies

Finding out the necessary capabilities to reach the collaboration goals is fundamental for effectiveness.

In this case the network capacity to expand thanks to the personal linkages of each member is crucial to create contacts with different firms. In addition, networks have the capacity to considerably improve competences of each member by spreading the knowledge.

However, if the skills required are very specific, finding the right strategic partners is of fundamental importance and the risk to not attend network goals increases (Provan and Kenis, 2007). For this reason, NAO and lead governance forms are more suitable because of their capacity to coordinate members' interdependencies from which these specific skills can be generated (*ibidem*).

#### 5.2.1 Some interesting considerations ad regards network effectiveness

These predictors support the thesis that governance deeply influences network effectiveness: any misalignment with the suggested form is likely to end in ineffective collaborations.

According with Provan and Kenis (2007), shared governance have to be preferred when trust is widely distributed, network members are few, pursue the same common goal and the required competences are not specific. Instead, coordination through brokers is useful when trust is not pervasive among participants, many firms participate to the network but do not necessarily agree on its goals and specific capabilities are required to obtain the desired outputs. More specifically, the lead organization can be effective when shared trust is combined with moderate goal consensus and specificity of skills (*ibidem*). Rather, if trust is not widely present and

the competences required are very specific NAO constitutes a suitable form of governance(*ibidem*).

In managing alliances, often firms adopt a portfolio approach: they engage in different partnerships at the same time. This is considered a strategic way to share the risks associated to uncertainty (Cools and Roos, 2006). However, this can bring also to under evaluate the whole risk assumed by the firm and can have the opposite effect of wasting a huge quantity of resources (both tangible, such as money, and intangible, such as time and skills).

Finally, it is important to make some reflections about the time horizon considered. In fact, reaching higher long term purposes sometimes requires to suffer small inefficiencies in the short term. In this case a wide consensus among participants is essential, since conflicts may arise from those who weigh the immediate small failures too much and look at long term expectations with suspect. Such disagreements can have detrimental effects on network effectiveness. This is true especially in shared or NAO governance forms, in which decisions are collectively taken. Rather, a lead firm may be useful because it reduces the direct involvement of individual participants and has the power to pursue long term goals and, in turn, network effectiveness Provan and Kenis (2007).

### 5.3 Evidences of network failures

So far the reasons why networks can be effective to overcome SMEs' constraints were presented. Moreover, four factors were highlighted to assess whether the adopted governance form is suitable and is likely to bring to the network success. However, no evidences were presented to prove the empirical existence of network failures and their causes.

Without referring to any specific case study, some authors (such as Kogut, 1989; Park and Russo, 1996; Human and Provan, 2000) reported of failing alliances, which ended within a decade.

In 2005 the Boston Consulting Group published a report where it identified the causes that had brought to the failure of alliances in the global airline industry in the 1990s. Four main problems were found:

- uncertainty about the equal distribution of benefits;
- huge initial investments that locked the participation of members to the network;
- loss of independency due to the strong commitment in the alliance;
- difficulties in the network coordination and decision making processes.

More recently, Moretti and Zirpoli (2016) have analysed the inefficiencies that currently affect the collaboration between the Venice Film Festival, an old famous cultural institution in Venice, and the local hospitality system. The authors identified the following detrimental causes:

- pursuing of individual interests by firms and offering of low quality services while raising prices;
- lack of competences and information sharing;
- absence of common strategies to solve shared problems;
- difficulties in involving partners to change traditional habits and in building coalitions;
- inability of associations to represent their members and lack of shared vision within the network.

These two examples confirmed the argument that networks sometimes are not successful.

Moreover, some of the causes identified may hide weaknesses in the above-mentioned predictors of effectiveness. In particular, it can be recognized:

- lack of trust: fear of obtaining less benefits than partners, individualism, suspect that partners act opportunistically, scarce information sharing and difficulties in building coalitions;

- number of firms involved: huge initial investments and strong commitment (due to the presence of few partners) and absence of common strategies (because of too much partners);
- absence goal consensus: individualism and difficulties in taking decisions and building a common vision;
- inadequate competences: lack of skills and inability to represent associates.

The presence of these elements suggests that a more careful evaluation of the governance form should have been carried out to preserve effectiveness.

However, as it will be explained later, these considerations do not involve actions that firms can undertake to modify the typical weaknesses associated to each coordination form.

#### 5.4 The literature on network failures

Even if two examples of unsuccessful collaborations were proposed, it is far from affirming that the literature on network governance is plenty of empirical investigations on failures.

Probably, one main reason for this lacuna is the scarce trust of firms toward partners, which reduces their initial expectations about collaboration outcomes and therefore their disappointment and propensity to denounce failures. Moreover, the difficulty and uncertainty in defining data on performances that determine the degree of effectiveness of networks in a clear and objective way probably represents a strong deterrent to engage in such complex theoretical works. Actually, many data on performance as regards SMEs are not available or are not clearly imputable to specific activities.

Existing literature about this topic was developed later than the one about failures in other forms of organization and still suffers a lack of analysis.

Earlier contributions date back to the end of the Eighties and the beginning of the Nineties, when Doz (1988), Borys and Jemison (1989) and Powell (1990) found some

problems in the organization of networks. In his article *Neither Market Nor Hierarchy: Network Forms of Organization* (1990), Powell tried to summarize their arguments in the following points:

- convergence in purposes among partners is difficult to achieve;
- firms often pursue subunit goals that do not always declare;
- middle managers can make scarce efforts to transfer top managers' enthusiasm to their subordinates as regards cooperation;
- difficulty in interpreting behaviours of partners with which they cooperate for the first time;
- threat that one party gains more advantages than the other partners or defect with the other party's learning or expertise;
- threat that one party gains benefits from cooperation while bringing useless contributions.

It is interesting to notice in these explanations the similarities with the two above-presented examples.

As regards trust, Borys and Jemison (1989) raised some doubts concerning its formation because usually partners have a different background and because the short durability of interactions discourages such behaviour. A similar argument was proposed by Powell (1990), who claimed for durability of partnerships among homogeneous actors. However, they only emphasized trust importance for long lasting networks but nothing was said about its real presence in networks.

Later, Burt (1999) noticed that the strong relying on trust supposed by literature may not happen in the real life and that there is reason to expect entrepreneurs to have problems in establishing trust.

Podolny and Page (1998), from a collection of the existent literature, found some elements which could obstacle the success of networks: an imbalance between embedded and arm's length relationships, the inexperience of partners in

collaborating, the lack of reputation of network members and the impossibility to control them.

Cools and Roos (2006) imputed ineffectiveness of alliances to some factors: overlapping of assets and gains from consolidation of operations and cost cutting.

In all these approaches it can be recognized that failure is related to the network's structural features (such as the absence of reciprocity among members or of gaps in their competences).

Conversely, Kilduff and Tsai (2003) underlined that it is limiting to base the assessment of performances to structural aspects and suggested to consider also individuals' characteristics and behaviours. Actually, they are commonly seen as consequences of collaborations' structure and therefore they are not independent changeable variables. The same argument was supported by Ahuja, Soda and Zaheer (2012), who alleged that the initial network structure can be altered by the behaviour of its members. Thus, explaining alliances' poor performances by looking only at their structure began to be considered a misleading and incomplete interpretation.

Trying to fill these gaps in the literature and provide a completed theory, other authors started to look at how networks are coordinated by focusing more on the role of agency and individuals. Schrank and Whitford (2011) found ignorance and/or opportunism as obstacles to effective network governance. Moretti and Zirpoli (2016) explained clearly these two concepts: "ignorance refers to (honest) competency shortfalls, such as the inability of firms to align their strategies or to solve a joint problem, mainly due to lack of skills or technical capacity. Opportunism is defined as the behaviour arising when partners do not have trust in and loyalty to each other, and in contexts in which norms of reciprocity and good faith do not characterize social interactions." (2016:5). However, they pointed out that all these attempts are not exhaustive in explaining the network failure. Therefore, they proposed to consider also the incapacity of networks to solve these problems on their own and therefore they claimed the necessity of institutions to monitor these behaviours.

Hence, the crucial point to fully comprehend poor performances in networks is the adoption of a dynamic approach that takes into account also the evolution of alliances (Kilduff and Tsai 2003; Moretti and Zirpoli 2016). These authors pointed out that members have a powerful role in shaping their alliances and determining the success or failure. This is because they possess skills and experience and adopt reactions to changes in the environmental conditions and different collaborative behaviours that inevitably affect the initial configuration of alliances.

To complete this dynamic approach to network failure, Moretti and Zirpoli (2016) added two dimensions: framing and mobilizing. Framing encompasses the various ways in which members can look at network problems. Obviously, the presence of different frames that compete each other creates conflicts that make more difficult the cooperation and can generate misleading interpretations of partners' visions. In addition, the existence of a framing network governance pushes participants to convince their partners to support their point of view. A process of mobilizing thus starts and new sub-alliances can be created, further disaggregating alliances.

According with authors, when these situations emerge the role of institutions is crucial to avoid network failure. First of all, they have to be reliable representatives of members, so that they can consider them as their reference point to reach coordination. Secondly, they have to favour the building of a common vision. These two point are strictly interconnected, since only a shared interpretation of network governance allows to link different interests and thus represent the whole network. This mobilization toward a joint frame brings to identify which collective actions have to be undertaken to solve conflicts and thus ensures effectiveness in the collaboration.

Therefore, this overview of the literature highlights that collaboration outcomes depend not only on the governance structure. Rather, it is the additional consideration of individuals' behaviours and features that allows to understand how networks evolve over time and therefore explains their final performances. This means that the predictors of effectiveness presented above have to be considered as useful guidelines to assess the structural configuration of a network and its potential weaknesses. However, analysts have to be aware that collaboration among

members can have a relevant incidence and can completely change any prediction. In this context, the role of institutions is fundamental to monitor participants' behaviours and ensure network effectiveness.

### 5.5 Conclusion

In this chapter it was explained the importance to properly govern alliances in order to realize the expected network goals. Understanding whether the adopted form of governance is suitable for the collaboration is a difficult task. Therefore, Provan and Kenis (2007) suggested trust, number of participants, network goal consensus and need for network-level competences as essential features to assess effectiveness.

Nevertheless, more recent works on this topic underline that the mere analysis of the adopted governance form is not sufficient to explain effectiveness of networks. Thus, they proposed to consider also the influence exerted by individuals and institutions that can modify the collaboration features determined by the administration. Again, new elements appear particularly useful: ignorance, opportunism, framing and mobilizing.

Therefore, a network analyst should merge all these elements to fully assess effectiveness of alliances.

This first part of this dissertation has presented the role of networks in helping SMEs from a theoretical point of view. In the following chapters an empirical case study to support these argumentations will be analysed.

## Chapter six

### LUCE IN VENETO

This chapter develops an empirical analysis of *Luce in Veneto* (LIV), *i.e.* a network of 38 SMEs from the Veneto region operating in the lighting industry.

The study started in June 2015 with a two-month internship at the headquarter of the network. This close collaboration with the broker of LIV provided a deep insight into many collaborative dynamics, such as meetings with entrepreneurs and potential service providers, promotion of activities to member firms and preparation of candidatures to public announcements. This experience aroused a concrete interest in the benefits of the collaboration among SMEs within a network framework and thus encouraged a deeper research.

Therefore, in April 2016, eight direct interviews to SMEs' entrepreneurs and to the network broker were conducted. The aim was to understand how they consider their collaborative experience and whether they have reaped advantages especially in terms of innovation and internationalization.

In this chapter literature background is used as a guide for the scientific analysis of the network. Moreover, direct speeches of entrepreneurs are reported to validate and support the argumentations presented and to add new useful contributions.

This study is both quantitative and qualitative. This means that quantitative data publicly available from the AIDA database were analysed with the aim of obtaining an overview of the lighting sector and of the processes of innovation and internationalization of Italian SMEs. This means also that qualitative data specifically related to the sector and to the network object of this study have been collected through direct interviews.

The main scope of this analysis is to understand whether the activities performed through network interactions has leveraged the processes of innovation and internationalization within SMEs.

## 6.1 Some initial considerations: the collection of data as regards the lighting sector

Two sources of data have been considered to analyse the lighting sector.

The first one is an elaboration of the ninetieth census (Istat, 2011) provided by the Veneto region. The choice to rely on an elaboration from a different entity was due to the fact that micro data on the lighting sector were not readily available from the ISTAT website and starting a formal procedure of request would have taken too much time.

The second source, instead, is Aida, i.e. a database which contains personal, financial and accounting data of limited companies.

In this second archive, the first problem in finding out useful data was the selection of the business activity, an information considered as representative of the firms in object. The indicator chosen for this research was the *codice Ateco* (Ateco code), that is, a code used in Italy to identify the core activity performed by a firm.

However, not all the limited companies which belong to LIV have the same *codice Ateco*. More precisely, 12 SMEs of LIV in AIDA – the 52% chose the code 27.4, which refers to firms which produce lighting products made of metal.

There are several reasons to justify the presence of different codes and a research in AIDA and in many SMEs' websites have highlighted some interesting information about this multiplicity. For instance, some companies simply commercialize lighting items, whereas others are consultant firms specialized in this sector. Moreover, some other SMEs have a wide range of products (not only light-related ones) or produce lighting items in non-metal materials. Furthermore, all the firms that produce items with different materials (such as ceramic, plastic and glass) use metal on their products and it does not exist a *codice Ateco* for non-metal products which refers precisely to the manufacturing of lighting products. Finally, some firms have different *Ateco* codes because they produce metal components for different purposes, such as the production of lighting items but these last justify their presence in LIV. Thus, this code has appeared the more consistent one.

Considering the above-presented information and after a discussion with the professor who assisted this study, the code chosen to collect data concerning the

lighting sector was 27.4, also because it represents the activity exerted by the SMEs in the network. Actually, firms which exert consulting or commercialization activities are few and their participation to the collaboration is based on the activities they perform within the lighting sector. Hence, an analysis of their *Ateco* code would have negatively affected the reliability of the study.

Therefore, in the rest of this dissertation, data from AIDA as regards the lighting sector derive from limited firms with *codice Ateco* 27.4. It were used the latest available data as of 14<sup>th</sup> of April 2016.

To identify 'SMEs' in the database, in an initial attempt there were considered only firms for which the last available precise data (and thus not estimates) related to the year 2014 from INPS (the Italian entity appointed for collecting workers' pensions), declared a number of employees lower than 50. However, there were found only 528 SMEs. This data, compared with the total Italian SMEs operating in the sector (i.e. 973) appeared as unreliable, since it implied that all the other companies in the sector were of large size. For this reason, it was judged as better choice to consider also estimated number of employees, computed on the basis of data as regards previous years.

## 6.2 The interviews

Given the size of the analysed network, interviewing some entrepreneurs has been considered the most valuable procedure. Therefore, 16 member SMEs were contacted via email. They were selected on the basis of their participation to network activities, their expressed will to participate to the RIR LIV or the possibility to reach their headquarters. Among the 16 firms emailed, only seven of them expressed their consensus.

All the interviews were conducted from the 18<sup>th</sup> to the 21<sup>th</sup> of April 2016. They lasted fifty minutes on average. After having assessed the accord of the interviewees, all the talks were recorded and then completely transcribed to ensure the reliability of the direct and indirect speeches reported. Of course, they were

previously informed that the records were collected only for this scientific purpose, with the respect of the regulations as regards privacy.

With the aim of ensuring the effectiveness and the homogeneity in the demands, semi-structured interviews were conducted to the people who usually manage the interactions with the network. In all the cases this role was covered by the entrepreneur but this is not strange if the size of their companies is considered. In addition, the choice of semi-structured interviews was due to the explicit intention of both collecting as much information as possible and allowing the interlocutor to describe his network experience from his point of view without influencing him. Of course, on the basis of the answers received, the interviewer added the questions she considered useful to better comprehend the answers and to further explore the point raised during the talk.

After having questioned entrepreneurs, some questions were proposed also to the network manager. The aim was to clarify some information found in the LIV website and to look at network dynamics from her point of view, with the intent of having a complete overview of the phenomenon analysed.

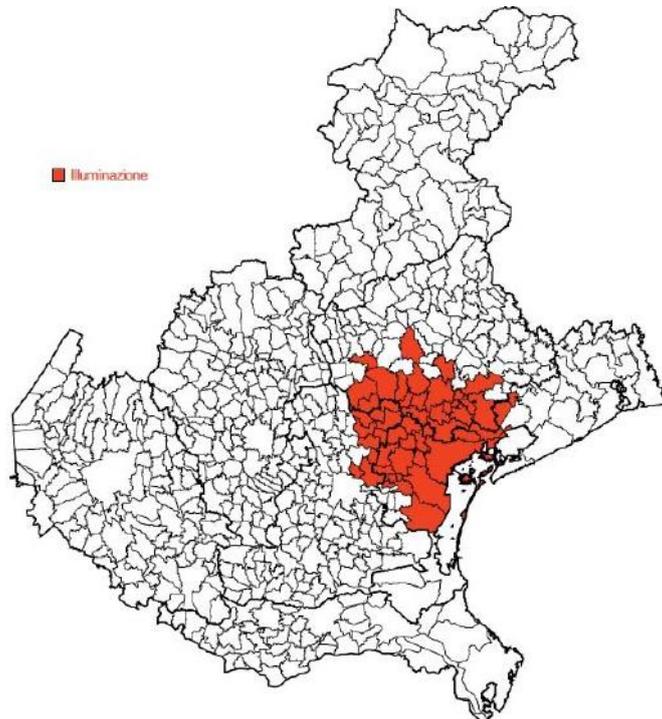
### 6.3 The lighting sector

From a research in AIDA emerged that in Italy there are 973 companies operating in the lighting industry. Among them, 910 (over 93%) are SMEs. Such high percentage is in line with the initial considerations done in this dissertation as regards the strong prevalence of SMEs in Europe and thus in Italy.

According to the '*Osservatorio Nazionale dei Distretti Industriali*', Italy is the first country which exports lighting products in Europe and the second manufacturer of such products, after Germany. Moreover, it is universally recognized as trendsetter in the sector.

Within this context, the Veneto region has the majority of employees working in the industry (*ibidem*), even if in Lombardy are set more firms. Actually, in this last region there are 301 lighting SMEs while in Veneto they are 202.

An elaboration provided by the Veneto region of the 2011 census supports these data and gives more insights.



Picture 1 Areas in Veneto where firms specialized in lighting products operate (source: Veneto region)

The picture demonstrates the areas where are located in Veneto the firms specialized in the production of lighting products. These include the provinces of Padua, Treviso and Venice.

#### 6.4 The origins of Luce in Veneto

In this paragraph the creation of the lighting network among SMEs in the Veneto region and its evolution over time will be explained. All these information are the result of an analysis of both the website [www.luceinveneto.it](http://www.luceinveneto.it) and the interviews.

The growing interest of the major local SMEs operating in the lighting industry pushed the municipality of Piombino Dese in 2006 to organize some meetings with the aim of illustrating the opportunities they would had access to by creating an industrial district.

The reason of that specific location was due to the fact that during the previous thirty years a multitude of SMEs, mainly craft laboratories, involved in the

production of chandeliers and similar items had chosen that area to set up their activities.

The necessary procedures to form the district were commissioned to an external company, and the employee who accomplished this task is nowadays the manager of the network.

In 2007 an initial step was moved and 8 firms constituted an *Aggregazione di Imprese*, i.e. a general term to identify strategic alliances created by firms which aim to collaborate in various activities.

Suddenly, other trading associations operating in the same geographic area entered the network and an *Associazione temporanea di scopo* (i.e. a temporary association formally constituted to reach precise goals) was established. Their first collaborative experience was the participation to an announcement (DGR no. 1577 of the 29<sup>th</sup> May 2007) promoted by the Veneto region for the creation of a web platform (i.e. [www.luceinveneto.it](http://www.luceinveneto.it)) to provide services for networks of firms operating in the lighting industry. The region then approved and financed the project.

Subsequently the company organized meetings with the aim of both discussing the potentialities offered by collaboration and identifying the major spheres of attractiveness. The result was that SMEs were more interested in projects regarding R&D, internationalization, logistics and involvement of as many SMEs as possible operating in the same sector and geographic area. Therefore, all their collaborative activities should had been related to these topics and carried out thanks to agreements with other entities or to contributions from the Veneto region and the European Community.

As a consequence, the decision to constitute an industrial district was taken. The participation was proposed to companies operating in the whole supply chain (thus, also to different sectors). In addition, also some institutions engaged in R&D activities were involved: the Information Engineering Department of the University of Padua, the *Parco Scientifico e Tecnologico Galileo* in Padua and the *Tecnologia&Design* laboratory in Montebelluna (TV).

In January 2008 119 members from all the lighting supply chain subscribed the *Patto per lo Sviluppo Distrettuale* (i.e. a formal agreement in which firms declare their will to constitute an industrial district), according to the regional law LRV no. 8/2003. After a control of the legal documents by both the Veneto region and the Chamber of Commerce of Padua, in July of the same year the *Distretto Veneto dei Sistemi per l'Illuminazione* (i.e. the industrial district of the lighting sector in Veneto) was approved with the DGR no.196 of the 15<sup>th</sup> July 2008.

To avoid that all these efforts were ineffective and to start launching joined projects, the person who had worked at the formation of the district proposed the creation of a narrower network composed of the sole partners which manifested their interest in engaging in a more concrete collaborative experience. To enter it, they had to produce quite different products among each other and to buy a share in the consortium computed on the basis of their turnover (i.e. €250.00 if t.<1mln, €500.00 if 1mln<t.<5mln, €1000.00. if 5mln<t.<10mln and 3000 if t.>10mln). In addition, every year they had to pay an annual fee equal to the initial quota, even if after the third year (i.e. in 2011) it increased (i.e. €350.00 if t.<1mln, €750.00 if 1mln<t.<5mln, €1500.00. if 5mln<t.<10mln and 3000 if t.>10mln).

Thus, in February 2009 35 SMEs agreed to form the consortium *Luce in Veneto Sc.a.r.l.* with joint stock of €25,750.00. It was led by a board of director composed of 5 entrepreneurs of member firms elected every three years by their partners. Their role consisted in choosing the strategic orientation of the collaboration and deciding which projects realise. In addition, they composed an assembly with all other associates and the influence of each member depended on the size of its share.



Picture 2 The logo of Luce in Veneto.  
Source: [www.luceinveneto.it](http://www.luceinveneto.it)

Partners decided also to rely on the same coordinator as network manager. Actually, they considered the presence of a full-time manager as fundamental to support their activities and thus to favour network effectiveness.

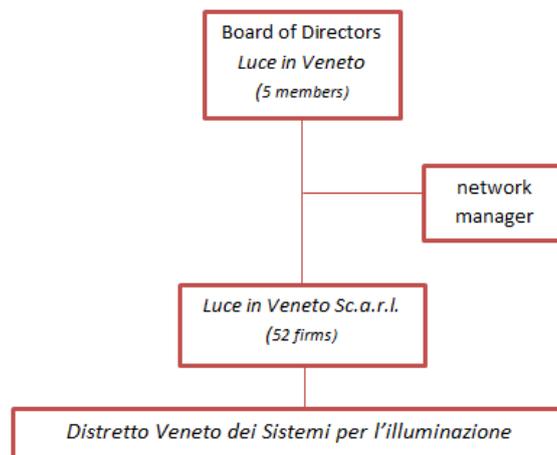
Furthermore, to be sure to take informed decisions, members decided to establish also a committee of experts with advisory functions. It would have been composed

of the municipality of Piombino Dese, the Information Engineering Department of the University of Padua, four trade associations (*C.N.A. of Padua, Confartigianato of Castelfranco Veneto, C.N.A. of Venice and Confartigianato of Mirano (VE)*) and the *Parco Scientifico e Tecnologico Galileo*. Nevertheless, although this committee was not formed, the consortium has relied on such institutions when necessary and only for single sporadic activities.

During these years the legal form of the consortium has highlighted its limitations. Actually, the initial intent of the manager was to create a flexible structure which members could easily enter or leave. However, among the legal arrangements existent at February 2009, they chose to constitute a Sc.a.r.l. The main problem of this structure came out soon when, due to the economic crisis, some firms have been bankrupted, some other merged and other simply decided to exit from the consortium. Each variation of the shareholders required the search for new entrants (in fact, associates neither wanted to buy exit company's share nor they wanted to share it among each other) and the involvement of a notary; it was therefore a complex and expensive operation.

In July 2010 17 new firms joined the consortium. Six months later, the Veneto region renewed the district subscription for the period 2011-2014.

The following schema helps clarify the organization chart of the lighting district in Veneto.



Picture 3 Structure of the lighting district in Veneto in 2010. My elaboration.

## 6.5 The collaboration with European clusters

In 2012, 10 European clusters, including LIV, founded the *European Lighting Cluster Alliance* (ELCA), i.e. an European Association with the headquarter in Denmark. It is a strategic alliance which aims both to increase the competitiveness of the European lighting sector and to create a structure in line with the policy “Europe 2020 strategy for smart and sustainable growth” (source: [lightingcluster.eu](http://lightingcluster.eu)).



Picture 4 Logo Elca. Source: [lightingcluster.eu](http://lightingcluster.eu)

From the point of view of LIV, the creation of ELCA was an event of extreme importance because for the first time Luce in Veneto engaged in a network with foreign partners. Furthermore, being part of a system aligned with European policies meant to have access to its grants. This in fact represented a significant implication for LIV, which acts mainly thanks to external contributions. Moreover, this international venture gave access to a wider range of contacts at both national and international level. For instance, nowadays the Italian members of ELCA mentioned in its website are: the Electronic Engineering Department of the University of Rome “*Roma Tre*”, the Information Engineering Department and the spinoff “*Light cube*” of the Univeristy of Padua, the “*Istituto di Fotocica e Nanotecnologie*” of Milan, the “*Luce*” laboratory of the “*Politecnico di Milano*”, the Photonics and Optoelectronics Lab of the Univeristy of Cagliari, “*Veneto Nanotech*”, the “*IUAV*” University of Venice, the Architecture Department of the University of Rome “*La Sapienza*”, *Luce in Veneto* and the National Association of Electronic Suppliers “*Assodel*”.

The second international collaboration in which the consortium is involved dates back to 2014, when Luce in Veneto, in collaboration with other 23 members of clusters from thirteen European countries, took part in an announcement proposed by the European Community.



Picture 5 Logo SSL-erate. Source: [ssl-erate.eu](http://ssl-erate.eu)

Their project, called “*SSL-erate*”, was part of the Seventh EU Framework Programme for Research and Technological Development under Grant Agreement No. 619249 and was approved (source: [www.lightingeurope.org](http://www.lightingeurope.org)). It is a three-year venture

whose aim is to accelerate the uptake of high-quality Solid State Lighting (SSL) technology in Europe by supporting open innovation and bringing validated information to all relevant stakeholders (*ibidem*).



Picture 6 Logo lighting for people.  
Source: [lightingforpeople.eu](http://lightingforpeople.eu)

The first concrete action performed within SSL-erate was the launch on the 1st April 2014 of *Lighting For People*, a web-based platform containing scientific findings on advances in human centric lighting, information concerning SSL and some products developed through the alliance (*ibidem*).

In addition, each cluster member has to host workshops. For this reason, last year LIV organized a two-day meeting in which some experts were invited to talk about topics concerning SSL. Moreover, some Italian firms were asked to present the product innovations they had developed within the *SSL-erate* project. In particular, also firms from LIV and from the lighting industrial district of Veneto were involved, as it will be better explained in the paragraph no. 6.10.2.

The following workshop organized within the framework of *SSL-erate* will be in May 2016. More precisely, it will consist of a two-day meeting set in three different locations: the Cà Foscari University of Venice, the headquarter of LIV in Piombino Dese (i.e. the *Villa Cà Marcello*) and the civic museum of Bassano del Grappa (VI).

## 6.6 Recent developments for LIV

In 2014 the Veneto region emanated a new regional law (i.e. the L.R. no. 13 of 30<sup>th</sup> May 2014 entitled "*Disciplina dei distretti industriali, delle reti innovative regionali e delle aggregazioni d'impresa*"- Discipline concerning industrial districts, regional innovative networks and firm aggregations) with which it abrogated the previous regulations concerning networks of firms. Related laws are the DGR no. 1020 of the 17<sup>th</sup> June 2014, the POR (i.e. the regional operative program)-FESR (i.e. the European fund for the regional development) 2014-2020 and the POR-FSE.

The reasons which had pushed the legislator to approach such a big challenge are probably linked to the "*Horizon 2020*" strategy of the European Commission. More

precisely, this was a political choice strictly linked to the possibility to obtain the funds that the European Community has allocated to implement its strategy.

With its normative revolution, the Veneto region admitted the existence of only 17 industrial districts (previously they were 40), selected on the basis of their historical and geographical roots in the region and of their estimated future competitiveness on the national and international markets (source: [www.ilsole24ore.com](http://www.ilsole24ore.com). Article published on the 18th December 2014). According to this new law, the *Distretto Veneto dei Sistemi per l'illuminazione* was excluded from the list of recognized industrial districts. From the point of view of LIV, which was one of its members, this meant losing the possibility to access to the regional facilities it used to perform some of its activities.

To all the networks which were not admitted as districts, the region proposed the formation of the so called "*Reti Innovative Regionali*" (RIR, i.e. regional innovative networks). Their critical features are a wide presence of the network in the regional territory and the involvement of member firms which produce new or innovative goods or which belong to new or innovative industrial sectors (source: [www.confindustria.venezia.it](http://www.confindustria.venezia.it)). To be recognized as RIR, networks had to present their candidature before the 10<sup>th</sup> November 2014. The funds that the Veneto region allocated to implement its development strategy amounted to €6,150,000,00 in total (*ibidem*). These are attractive resources, which it will grant for financing only those projects regarding the following purposes: internationalization, innovation and environmental safeguard and sustainable development. To reach these broad goals, the region identified six axes corresponding to the actions it concretely wanted to implement and thus to finance (*ibidem*).

All things considered, it might be concluded that, from the point of view of networks, the recognition as RIR meant being assumed as aligned with the regional and European strategies and this fact, in turn, represented a favourable condition to access regional attractive funds.

Hence, for *Luce in Veneto*, which has evolved and operates mainly thanks to funds provided by the European Community and the Veneto region, this represented a

new, big and ambitious challenge that LIV could not miss to guarantee its sustainment.

The strategic response that LIV gave to these new conditions in the legal and business environment has developed on different directions.

First of all, the network took the advantage to restructure its configuration and to abandon its complex legal form. In fact, at the time in which the region abrogated some of its laws in 2014, the consortium was formally composed of many firms but some of them had expressed the will to exit and thus they did not pay the annual fee even if they already possessed a capital share. The most direct detrimental effect that this situation had on the consortium was on the balance sheet. In fact, the unpaid fees represented long term credits that gave a misleading idea of the assets of the consortium and in turn caused a higher fiscal pressure.

Therefore, LIV SMEs took advantage of the changes in the regional legal framework to create a new network of firms, called *Rete di Imprese Luce in Veneto* (RI LIV, i.e. Network of Firms LIV) on the 18<sup>th</sup> January 2016, composed of the sole firms which declared a real interest in continuing the collaboration. Some meetings had been organized some months before to explain the new challenge to member firms and to collect their will to become partners of the RI LIV. 90% of them agreed to enter the collaboration. The new legal form, i.e. the network contract, was introduced by the national legislation in April 2009 (law no. 33 of the 9<sup>th</sup> April 2009), thus after the formation of the consortium. This law was later modify, in 2012, when the recognition as legal subject (law no. 134) was introduced for structured networks (such as LIV), which had both a joint stock and a board of directors.

As regards *Luce in Veneto Sc.a.r.l.*, it was decided to wait for closing the consortium until the ongoing European projects in which it was involved end.

The RI LIV is a non-profit network. This characteristic obviously finds its strategic roots in the above mentioned broader goal of having access to regional incentives. As regards this analysis, another interesting aspect is that partners slightly modified the organizational structure they had adopted for the consortium in order to better cope with the new legal form. Actually, there is a management committee

composed of five members, the same network manager of the consortium and a network innovation manager. In particular, this last person has the role of capturing new ideas for innovative research projects by being in strict contact with universities and other research institutions.

At the moment, the contract of the RI LIV is opened and thus each company can ask to enter at any time and there is not a fixed amount of member firms. Now there are 38 participants. All the partners have to pay an initial sum of €100.00 and an annual fee according to their turnover (i.e. €100.00 for start-up, €250.00 if  $t.<1\text{mln}$ , €500.00 if  $1\text{mln}<t.<10\text{mln}$  and €1400.00 if  $t.>10\text{mln}$ ). Having the same quote in the joint stock implies that their importance in the assembly does not depend on their share in the capital anymore, but all of them have the same influence in the decisions.

Concerning the admission criteria to the RI LIV, it is different from those of the consortium. Essentially, to be a member of *LIV Sc.a.r.l.* firms had to be part of the same geographic area and to produce slightly different products. Instead, to become a member of the RI LIV these rigid criteria have been abandoned. The main reason is related to political aspects. In fact, the region is interested in financing only activities which have a relevant impact on the territory and thus it is important to involve as many firms as possible. Therefore, nowadays to enter the RI LIV firms have to belong to a limited geographic area (i.e. the Veneto region, even if it was decided to admit some firms from other regions, up to the 20% of the total number of participants), to be innovative and to perform activities that can be considered related to *smart lighting* issues. At the moment, 37% of partners are from Treviso, 24% from Padua, 21% from Venice and the rest are from the provinces of Verona, Vicenza and Pordenone. Nevertheless, as explained by the network manager, the decision to admit a new member is the result of a discussion in the management committee, of a communication to partners to assess their consensus and of a dialogue with the entrant firm. Thus, it is not a rigid procedure but it leaves the possibility for a dialogue.

However, what mainly expresses the flexibility of this new legal form is that a firm can join or leave the network at any time. Moreover, to validate its decision it is

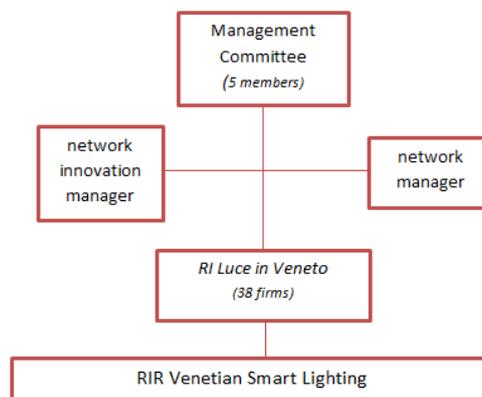
sufficient to communicate it to the Chamber of Commerce of Padua, without the need to replace its capital share and pay for a notary deed.

A second strategic aspect is that the new norms established by the Veneto region opened the possibility for firms from other industrial sectors to enter the network. As underlined above, the sole constraint is the focus on smart lighting issues. From the perspective of the SMEs of RI LIV this means the access to new contacts and capabilities and thus the possibility to increase their know-how, in order to better and rapidly satisfy customers' needs with a more complete offer and to establish new strategic partnerships for other collaborative projects.

Having considered all these advantages at both network and SMEs levels, the RI LIV promoted the constitution of the RIR "Venetian Smart Lighting" (VSL), which was formally recognized on the 1<sup>st</sup> March 2016. It is composed of the following entities:

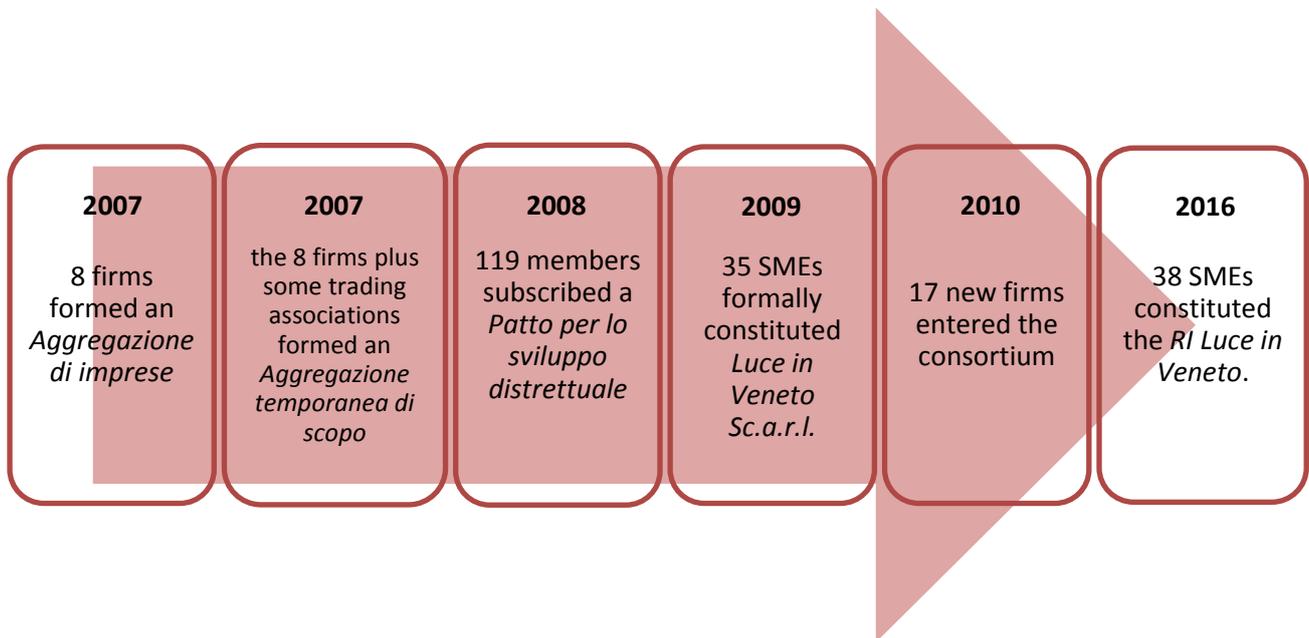
- LIV Sc.a.r.l. (until European projects are not completed)
- RI LIV (the promoter)
- Universities of Padua, Venice (both Cà Foscari and IUAV) and Verona
- some firms from the smart lighting industry
- *Parco Scientifico e Tecnologico Galileo*

The following schema helps clarify both the organization chart of the RI LIV and its position with respect to the RIR Venetian smart lighting.



Picture 7 The organization chart of the RI LIV. My elaboration.

Instead, the timeline below summarizes the development path of the network of SMEs operating in the lighting industry in the Veneto region.

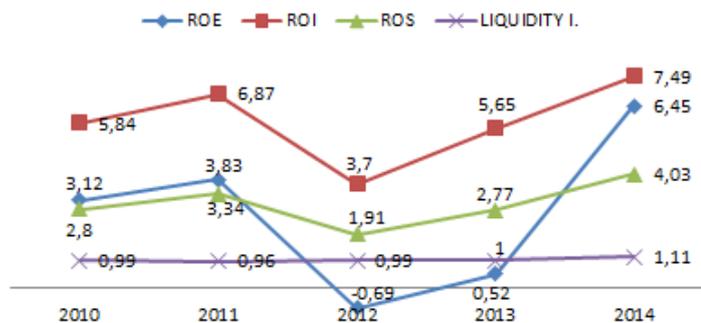


Picture 8 The structure of the RI LIV in 2016 and its position with respect to the RIR VSL

### 6.7 Characteristics of the SMEs of the RI LIV

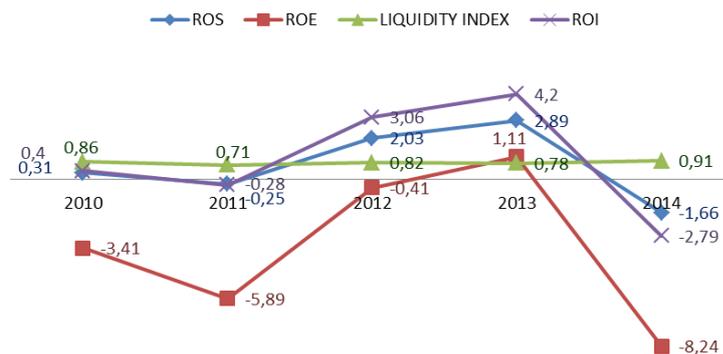
This paragraph completes the description of the network analysed. In particular, it compares the profitability performances of the SMEs of LIV Sc.a.r.l. (because data are available from 2010 to 2014, when the legal arrangement was the consortium-see Picture 10) to the ones of the total SMEs in the Veneto region with *Ateco code* 27.4 (see Picture 9). All the data have been obtained from the AIDA database and then elaborated by using the software Microsoft Excel.

## Profitability ratio



Picture 9 Profitability ratio of SMEs of the Veneto SMEs

## Profitability ratio



Picture 10 Profitability ratio of SMEs of the consortium

The first general impression of the reader who compares the two graphs is that on average the lighting SMEs of Veneto performed definitely better than the ones of the consortium and that, apart from the liquidity index, there is a substantial difference between the same ratio in the two graphs. More interestingly, especially as regards ROE and ROI, the development paths of these indicators appear quite opposite but at the same time they seem also quite similar within the same line diagram. In the rest of the paragraph some considerations will be presented with the intent to explain the nature of the trends.

First of all, it can be noticed that while the ROE of the sector increased from 2010, changing from a value of 5.84% to a value of 7.49, the same index concerning the network decreased, moving from a value of -3.41 to a value of -8.24. This means that it was profitable to do business in the sector in general but this was not true concerning the SMEs of LIV. Furthermore, it is interesting to note that they registered the worst performance in 2013, when their regional colleagues reached the highest growth rate.

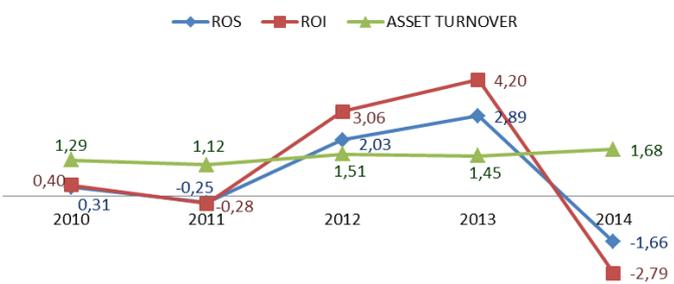
As regards the regional data, the ROI always performed very well and, apart from 2011, its increase was nearly constant every year. This suggests that the lower performance of ROE was due to the financial and/or the non-core activities.

Instead, concerning the consortium, the management of investments were less efficient. This fact, combined with low performances in the financial and/or non-core activities, caused a bad profitability of the whole network.

Unfortunately, data as regards both the leverage index and the non-core activities, i.e. the other two determinants of ROE, are not available in AIDA. However, a deeper analysis of ROI would be useful to assess the performance of the core business.

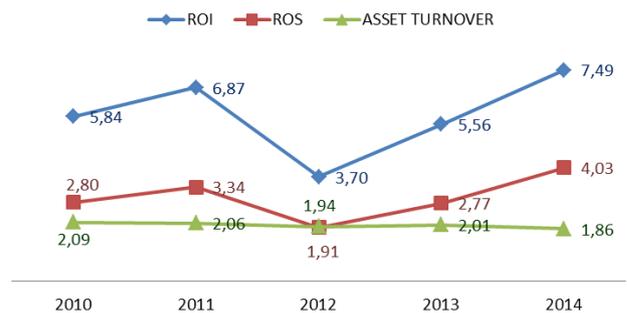
Considering that the ROI is composed of both the ROS and the asset turnover, in the graphs below the trends of these two determinants are presented to explain ROI variations.

**Analysis of ROI and its components**



Picture 11 ROI components (LIV SMEs)

**Analysis of ROI and its components**

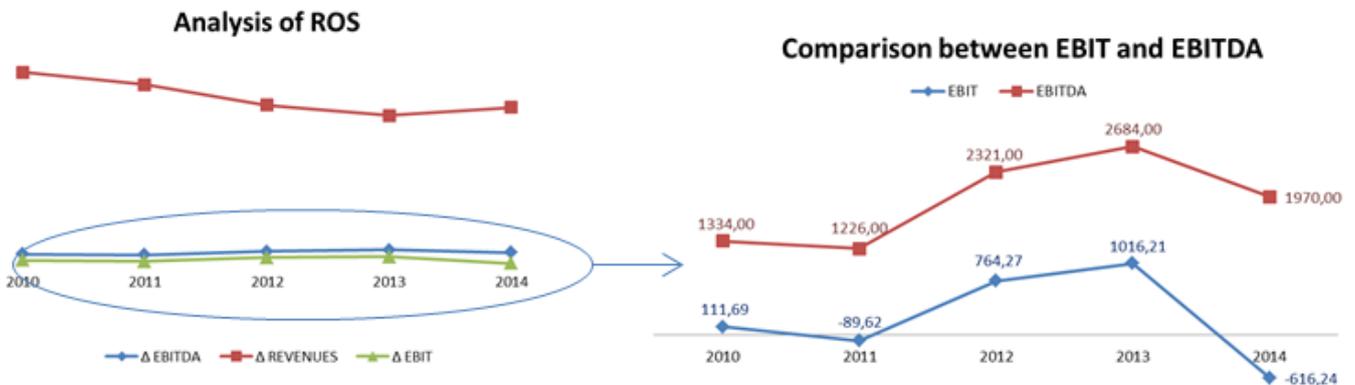


Picture 12 ROI components (Lighting SMEs of Veneto)

In Picture 11 the asset turnover presents an average value of 1.41 while in Picture 12 this average is equal to 1.99. This index expresses the efficiency of firms' use of their assets in generating sales revenues or sales incomes (source: Wikipedia). Thus, it can be said that Veneto lighting SMEs were slightly more efficient than the ones of the consortium concerning the management of assets. Nevertheless, the fact that this ratio remained always positive and nearly steady over time, with a deviation standard of .2 in LIV SMEs and of .1 at sectoral level, means that the ROS had the main influence on the ROI. As regards the consortium, it must be observed that during 2013 there was a strong decrease in ROS (-57%) which changed the development trend of the index and, in turn, determined the underperformance of both ROI and ROE.

To understand the variation in this index, it is necessary to look at its components, i.e. the EBIT and the revenues. The following line graphs shows the development of these variables concerning the sole LIV SMEs. To allow the consistency of the analysis (actually, the number of members was not the same over time) the average

of the data was computed. Moreover, the trend of the EBITDA was included to assess the influence of interests, depreciations and/or amortizations (i.e. non-monetary costs) in the whole performance.



Picture 13 Analysis of the determinants of ROS of LIV SMEs and the comparison between EBIT and EBITDA

Looking at the graphs it is possible to note that the revenues decreased but in 2013 they started to increase. Instead, there was a constant substantial difference between the EBIT and the EBITDA over years but it was particularly strong in 2013. This means that the cause of bad performances in network SMEs were in their non-monetary costs, thus meaning that the firms of the consortium should improve their accountability choices.

This paragraph highlights that the policy of the firms of the consortium concerning the management of non-monetary costs negatively affects its whole economic performance. However, the reader must be aware that this analysis covers only core activities (while the indexes of both the leverage and the non-core activities have not been considered) and this fact represents a limit to the complete examination of LIV's performances.

## 6.8 The penetration of the network contract in Italy

Before presenting the results of the analysis of this network, it seems useful to complete the overview of the context by showing the diffusion of the network contract in Italy and its impact on SMEs' activities.

The fourth 'Osservatorio Intesa Sanpaolo-Mediocredito Italiano sulle reti d'impresa' (2014), which was published in March 2014, provides some interesting insights on the Italian firms which have stipulated a network contract. Lombardy is the region with the higher number of firms involved (1564), followed by Emilia Romagna (907), Tuscany (689), Abruzzi and Veneto (about 500 both). Firms which engage in network contracts present a better competitive position with respect to the others. More precisely, in the following table the more details are provided according to the type of activity considered.

**Table 2. Influence of network contract on firms' activities**

<b>Activities</b>	<b>Percentage of firms engaged in the activity and that participate in network contract</b>	<b>Percentage of firms engaged in the activities but do not participate in network contract</b>
<b>Export</b>	52%	30%
<b>Quality certifications</b>	28%	16%
<b>Firms participated by foreign investors</b>	16%	6%
<b>International trademarks</b>	17%	7%
<b>Patents from EPO</b>	17%	6%
<b>Environmental certifications</b>	14%	6%

These interesting data suggest that being part of a network has positive impacts on firms' activities. It is important to note that the Italian legislation offers a fertile ground for the formation of network contracts, mainly due to the significant presence of SMEs that face obvious difficulties in engage, for example, in successful innovation and internationalization strategies by going solo.

### 6.9 Data analysis

The Table 3 in the following page shows the results that emerged from the interviews.

The general judgement expressed by interviewees is positive and this is consistent with the fact that all of them have chosen to renew their participation to the network by subscribing the RI LIV contract. Nevertheless, this information can be considered as representative of the opinion of all the members, if the high percentage of firms which decided to continue the alliance is considered (i.e. 90%). Of course, some entrepreneurs manifested their disappointment concerning the management of the previous legal form (i.e. the consortium) or highlighted some inefficiencies in the collaboration but in this case they always identified possible solutions, thus reflecting their optimistic attitude about the alliance.

#### 6.9.1 Impacts at firm level

From a scientific elaboration of the interviews, both the effects that impact each business and the dynamics which occur at network level were identified.

As regards the first point, i.e. the results at firm level, a benefit that all the interviewees declared is the huge availability of contacts that the collaboration provides. Actually, the participation to the network allows them to improve the knowledge of their business environment. This is a valuable aspect since within SMEs entrepreneurs are usually the most involved people who have to fulfil a lot of various tasks. Therefore, they rarely have enough time to establish contacts with the external environment. Hence, in these cases the network represents the place where members have the opportunity to meet their colleagues and to identify their partners. An entrepreneur expressed clearly this point: *"a fundamental consequence of the formation of a consortium was the fact that you know your potential competitors. In addition, you can identify your prospective partners with which to start new projects in case you share the same philosophy and there are not conflicts in terms of products...If firms are established in the same area entrepreneurs know each other but they never go out for a dinner. Rather, the network provides the chance to meet and to exchange opinions. In this way you can choose the partners you prefer"*.

Impacts at Firm Level	It provides business contacts	Contacts	Valuable Business Environment		
	It allows me to identify potential partners and to know my business environment				
	It gives me access to expensive international fairs	Internationalization			
	During a meeting a partner proposed to join his commercial network in Romania				
	It allowed the creation of new commercial channels in Canada and Saud Arabia				
	It provides access to a well positioned big area at fairs and this improves my image	Legitimacy			
	I can directly talk with the right people because a partner has a direct contact in that company				
	It organizes useful courses and constantly informs me with interesting news in my business	Knowledge Acquisition		Locus of Innovation	
	Courses allow to take informed decisions and to communicate innovation within the company				
	By joining different skills we have created new innovative products	Knowledge Creation			
	It gave me knowledge necessary to restructure my marketing function and improve my offer				
	It gives information useful to improve processes				
	Special favourable conditions have been arranged at network level concerning certifications	Cost saving			Improves Economic Performance
	I do not need to pay neither a marketing analysis nor someone who look for the latest updates				
	By sharing opinions with partners you can solve problems in the cheapest way				
	It gives access to announcements	Source of Additional Funds			
	Funds from announcements financed our new website and supported our venture in Canada				
	Funds obtained through announcements allow to engage in additional fairs or missions abroad				
	It allows to contact the right people in the lowest possible time	Speed		High-level Performances	
It informs about new technologies in advance and this allows to produce innovations on time					
By sharing opinions with partners you can solve problems rapidly					
By working in team we have created an innovative product in only three meetings					
We are able to satisfy big orders by dividing the production among partners	Coalition Building				
Because of the possibility to meet many potential customers in the same place, the representant of the certficate entity is willing to come to the consortium where we can directly talk with him and find solutions					
By putting together different skills we have created new innovative products					
Collaboration allows to offer dfferent products and this increases our appeal to customers					
Dynamics at network level	There is not a fair collaboration among partners	Ambiguity of Trust	Ambiguity of Relationships among Members		
	Firms are reluctant to open their firms				
	It allows to meet your partner, to exchange information and thus to build a sort of trust				
	I met the partner with which I actually join the same commercial network in Germany and with whom I exchange information as regards customers and potential customers				
	The individualist mind of people in Veneto represents a strong obstacle to collaborate	Individualist Culture			
	It is difficult to coordinate people which are not used to collaborate				
	I can freely talk with the netw. manager because I am confident she is <i>super partes</i> .	Intermediary	Governance Arrangements		
	The presence of a network manager is crucial				
	She allows to cope with bureaocracy				
	The network manager should encourage the collaboration among partners				
	The consortium was managed so that the biggest firms are the most important	From Power Asymmetry to Symmetry			
	It was founded to support smaller firms but the biggest had a higher decisional power				
	I joined the new RI LIV because the decision-making power is equally distributed				
	To reap benefits from collaborating it is necessary an active participation	Active Participation	Direct Involvement of members		
	Now I feel to have more opportunities within the network since I have hired more employees and thus I have more time to participate to network dynamics				
A database of members' skills would make easier the identifications of a potential supplier	Improvements seeking				
To incentive innovation it is necessary to train agents and shop owners					
There should be a network technical office which should provide projects to customers on the basis of members' products					
It should be implemented the collaboration with other commercial sectors					

Table 3 Data structure

A second benefit recognized by the majority of members interviewed is the possibility to expand their business abroad. Actually, these operations are usually expensive and rarely SMEs possess the necessary resources to engage in effective global ventures. Instead, collaboration provides several opportunities to start and improve global strategies. The most common international activity is the organization of fairs. The initiative starts from members or directly from the agents who organize the exhibition. They ask the network manager to arrange some favourable conditions for the collective participation. These usually consist in a big area well-positioned, usually equipped with the same style. From a visitor point of view, it seems a 'pavilion within the pavilion', and this stimulates its curiosity. In this way members in this way attract potential customers while also increasing their legitimacy. Apart from fairs the SMEs of LIV have collectively started three international projects directed to specific foreign countries. These ventures will be better explained below in the paragraph no. 6.10.1.

The participation to international exhibitions highlights a third positive outcome obtained by member firms, i.e. the legitimacy. However, this externality is not limited to fairs. Actually, an entrepreneur affirmed that he was able to easily obtain direct meetings with important people from external big companies thanks to the connections that his partners had in these external entities. He judged this aspect of extreme importance, since he had the opportunity to directly talk with the most influential people without intermediaries.

All these three advantages demonstrate that LIV contributes to the formation of a valuable business environment for his members.

Concerning benefits in terms of learning, interviewees stated that since its foundation the consortium has been organizing continuous training seminars on the topics suggested by its associates. These were very useful to update entrepreneurs on the latest news in the sector and to help them to take informed decisions to improve their business. Moreover, courses are profitable to communicate innovations within the firm because sometimes employees take part to them.

Another important aspect for which the network can be considered a source of learning is its newsletter through which partners are continuously informed of these

courses or of other opportunities. Furthermore, according to two entrepreneurs during training sections new ideas may come out. For example, during a seminar a member had an idea and his colleague decided to support it with his personal skills. The result was the implementation of an antibacterial lamp, i.e. a product which uses the UV-LED to make the air as healthy. They then worked together to protect their innovation with a patent. Unfortunately, the product has not already been commercialized, mainly due to the huge costs that both R&D activities and marketing campaigns represent for SMEs.

In addition to these, another benefit recognized by one third of the interviewees was the implementation of their marketing functions thanks to the precious notions learned during courses. Actually, they were able to identify some lacuna in their communication activities and to learn how to improve them. Some entrepreneurs claimed that the majority of seminars organized by the consortium have been mainly on marketing topics, finding the main cause of this limit in their myopic attitude to refuse other type of initiatives because they imply a disclosure of their business practices.

The considerations made as regards the acquisition and the exploitation of learning coming from the network reflect that the alliance represents a locus of innovation for its members.

Year after year LIV has been offering to its members also the possibility to improve their economic performances both in terms of cost saving and of source of additional incomes. For instance, certifications necessary to sell products abroad are a critical aspect which concerns all the entrepreneurs who export their goods to extra-UE countries, both in terms of the difficulties of preparing products and of the huge costs required. In this context, the network plays a crucial role in arranging favourable contractual conditions which consist in sharing some fixed costs regarding the achievement of the certificate and its annual renewal. For example, members can select one firm and agree to bring all their products there in the same day. This sharing of the location allows them both to collectively pay a single transfer of the technicians (in fact, these entities are usually established in Milan) and to learn how to improve their products by looking at the critics raised by controllers

toward their partners' goods. Another example was the organization of a meeting in the headquarter of LIV in June 2015 in which the two companies SGS Italia S.p.a. and Intertek Group plc. specialized in providing services for validating products in international transactions, offered member companies special favourable conditions for obtaining the SASO CoC, i.e. a compliance certificate which is mandated to sell products in Saudi Arabia. This meeting was very appreciated by the entrepreneurs whose products are suitable for this attractive market, since it was perceived as a concrete opportunity to overcome a serious obstacle.

The above-mentioned training courses are valuable also because they let entrepreneurs save a lot of money, since they do not have to pay for someone who provides them with the information they need. In this connection, the quote of an interviewee is interesting: *"The participation to the consortium is also a way to save money. In fact, I pay the annual fee to the alliance but I receive from it a lot of necessary information. Otherwise, I should pay someone who performs this task and this would be more expensive. This is true also for the announcements. Moreover, concerning the marketing function, it is more useful and less expensive to be always informed thanks to training programs rather than to pay someone who come here and perform a marketing analysis. It is completely different"*.

Finally, regarding cost saving, a positive externality obtained from the collaboration with other entrepreneurs is the possibility to solve problems simply by talking with partners and exchanging advices.

The SMEs embedded in LIV obtain additional funds from the participation to the network. In fact, when a new announcement is published the network manager informs immediately the members of the new opportunity, so that each interested firm can either express its will to participate or even look for a partner, if necessary. SMEs have obtained several additional monetary resources so far. For instance, they have received funds to renew their websites, to make some fairs or to continue their ventures abroad in order to improve their marketing function, to participate to additional exhibitions or commercial missions and to carry on collaborative projects which would be too much expensive even if performed in team. For these reasons, it can be affirmed that LIV improves economic performances of its partners.

Finally, LIV represents a fertile place to reach additional high-level performances, i.e. speed and coalition-building. Actually, an entrepreneur stated that exploiting partners' contacts is the most rapid way to arrange an appointment with an unknown person. According to another interviewee a fundamental advantage in terms of speed consists in obtaining relevant information in advance because this improves their time-to-market. Her words explain this point clearly: *"As regards the Internet of Things, I recently have started to receive a lot of emails from various associations which describe it as the latest news. Rather, the consortium introduced the topic five years ago and in 2012 it organized the first training course. In fact, having a connection with many different entities the network is able to give us information in advance. In this way I have the possibility to learn about technologies and arrange my products accordingly on time"*.

Finally, the opinion of another entrepreneur was interesting: he said that the collaboration with other two partners has allowed the creation of a product innovation in only three meetings thanks to the combination of different skills.

So far in this paragraph the impacts that each firm has obtained from the network were presented. The rest of the section explains the dynamics observed at network level.

#### 6.9.2 Dynamics at network level

The most contradictory theme which emerged from interviews is trust. Actually, on the one hand all the entrepreneurs affirmed that they carefully exchange information among each other and they rarely talked about fairness. The main reason they used to justify such behaviour was the fact that their products are similar and therefore the majority of them are potential competitors among each other.

However, on the other hand some of the same people stated that with some partners they have established regular interactions which consist not only in client/supplier relationships but also in sharing strategic information. One of them, in particular, affirmed to systematically join business activities with some LIV

members and to have the same commercial network abroad. More precisely, concerning this last point, the entrepreneur declared: *“with a partner we regularly collaborate because we share the same commercial network in Germany. Thus, we participate at fairs together by sharing the same stand so that agents do not need to move. In addition, there is an exchange of information as regards both current and potential clients”*. This fact thus reflects high trust among the two firms and not simply confidence in agents’ fairness.

Moreover a cultural element emerged from a deeply investigation of these collaborations among partners. In fact, nearly all the entrepreneurs talked about the typical culture of people from Veneto, which is naturally individualist. They validated this observation by bringing as examples their personal experience or simply the phenomena they observed in other Italian regions such as Lombardy, Tuscany and Emilia Romagna. For instance, an entrepreneur claimed the fact that he met a LIV member at a fair in Dubai who did not want to disclose the price paid for the stand. He commented this episode by affirming that he had not asked a ‘strategic’ information which would have compromised its partner’s business but simply a curiosity, which his colleagues from Tuscany would have released without reluctance.

Nevertheless, the presence of these two problematic elements, i.e. ambiguity of trust and individualist culture, has not apparently had a strong negative influence on network effectiveness, since partners have however been able to reach the majority of their goals and have obtained also additional benefits. Rather, they have proved to both wane the perception of trust among members and limit the full exploitation of network positive externalities in terms of knowledge flow. This last point means that probably less individualism would produce a more widespread exchange of information with respect to the current situation.

A role considered as fundamental by all the interviewees is the one played by the network manager. First of all, they agree in affirming that an intermediary is necessary to ensure network effectiveness. Actually, they are entrepreneurs of small firms in which they take on different roles; therefore they have not enough time to carry on additional activities. For this reason, in their various network arrangements

(considering all the different legal forms adopted since 2007), they have always maintained the presence of an intermediary because they have recognized her crucial role. Secondly, they find helpful her presence to cope with the bureaucracy they need to manage, especially when they want to appoint for an announcement. In fact, in this case they only have to express their will to candidate and she arranges all the necessary documentation. Thirdly, members have established a special fair relationship with the network manager, who they consider as *super partes* and thus they are confident about her fairness. Finally, some of them attributed to her the role to push ahead the collaboration among members. As regards this affirmation, the majority of them thinks she successfully accomplishes this task by combining different ways of thinking and opinions. Instead, others think that this task is not successfully performed due to their individualist culture which discourages the collaboration and thus represents a serious obstacle.

It has to be noted that no one talked about the innovation manager recently established. Though, this seems normal since he was appointed just few months ago and they have not already experienced his actions.

Two small firms interviewed claimed that the biggest partners were the most influential players in the consortium. However, to justify their participation to the current legal form, i.e. the RI LIV, they affirmed that it has brought a significant improvement in this sense because now all members have the same importance in the decision-making process and therefore they feel to have more influence in network activities.

Consequently, both the presence of the intermediary and the power symmetry have proved to be two fundamental ingredients to increase the sense of fairness and the level of satisfaction perceived by partners. Actually, without the network manager collaborative activities would have not been performed and without changing the legal form (i.e. the consortium) some members would have abandoned the alliance, thus compromising its existence. In fact, considering the costs that such a structured collaboration implies, its survival with a substantial lower number of associates seems unreasonable. Therefore, it can be concluded that from the interviews with

entrepreneurs the adoption of a proper governance arrangement emerged as a central theme.

Finally, all the entrepreneurs agree on the importance of an active participation to network dynamics. Interestingly, this was affirmed also by those who expressed some complaints, since they found their scarce involvement as one of the reasons of their dissatisfaction. Moreover, smaller entrepreneurs stated that their simple organizational structure and their limited number of employees negatively affect their influence in the network, because sometimes they cannot take part to meetings and thus give voice to their opinions.

Another valuable aspect which emerged during interviews is that all the people noticed some inefficiencies but all of them found a possible solution. This means not only their optimistic feeling about the alliance, as stated at the beginning of this section, but also their proactive attitude towards the search for possible solutions to improve the collaboration.

To conclude, it can be affirmed that the direct involvement of entrepreneurs through both their active participation and their problem-solving approach is an important mechanism which acts at network level.

#### 6.10 Additional considerations as regards innovation and internationalization in LIV

In this paragraph, in line with the main goal of this dissertation, the internationalization and innovation processes developed by the SMEs within the LIV framework will be presented. These have been two of the goals which pushed the formation of a network since 2008. However, during years their configuration has changed and evolved thanks to the collaboration.

##### 6.10.1 Collective international ventures of the SMEs of LIV

Concerning the spread of products toward foreign markets, initial collaborative actions consisted in the sole participation in global fairs, which still represent the main form of internationalization firms collaboratively accomplish. The decision to

arrange a fair at network level is taken by members, who express their favour to the proposal they received from the network manager or from a partner. Usually the offer consists in both sharing the same exhibition area marked with the logo LIV and booking hotels and products deliveries all together. So far various are the cities in which the network has participated in international fairs, such as Moscow, Bucharest, Frankfurt, Milan and Jeddah.

Similar activities are missions or business meetings, organized by public institutions such as the Chambers of Commerce. These ventures were considered by an interviewee as useful especially if Italian producers go abroad, since foreign customers' interest is greater and thus there is a higher probability to collect new orders. So far, the consortium has taken part in this type of exchanges with Ukraine, Japan, Hungary and Slovenia.

Nonetheless, during years the network has enlarged the typology of international activities it performs. In fact new collaborations with the other European clusters have been established. From the point of view of SMEs, they have gained more opportunities to access to international projects and, in turn, not only to obtain funds but also to receive the consultant of experts from abroad, such as Philipp Novotny (from the Department of Applied Science of the University of Monaco), Win Vanhaverbeke (University ESADE of Barcellona) and Marc Steen (TNO). In particular these last two scholars, during the meeting WP4 of SSL-erate of the 18<sup>th</sup> June 2015 in Bassano del Grappa, supported firms in the identification of both their current and potential customers and their needs in terms of resources and partnerships to develop the innovative products they had produced. Since the main implication of these items called *Business Development Experiments* is in terms of innovation, they will be better explained in the next section.

Moreover, in 2011 25 SMEs of the consortium expressed their interest in sharing the same commercial network in Romania. This venture was proposed during a network meeting by a partner who had an already established logistic channel which connected Italy and Romania and, for this reason, he has managed the project since its origin. This venture can be considered as successful since firms started immediately to collect orders. This is due to the fact that customers in Rumania

appreciate the possibility to buy many different products from the same distributor, as noted by the network manager. Because of the positive feedback partners received from the Rumanian market, in the years 2012 and 2013 the consortium participated to the exhibition 'EXPO AMBIENT' in Bucharest.

Two similar experiences were implemented some years later, when a small group of partners started two new ventures in counties considered as attractive.

The first one saw the joint effort of four LIV SMEs to try their expansion in the North America. In fact, it is a difficult market since consumers' tutelage is severe and sellers have to invest a lot of money for both the civil insurance and the certification of products. The goal of this small group of partners is to learn how to cope with the Canadian market and to test the feedback received from customers. Then, in case of positive response, they plan to expand their commercial activities in the U.S.A. The advantage they obtain from a collective action consists not only in sharing certification costs but also in becoming more attractive to both customers and agents thanks to an unique complete catalogue.

The second collective action regards the Saudi market and involves eight partners who decided in 2012 to formally constitute another separate network called *Venezia in Luce*. However, giving the relevance of this venture it will be better explained below, in the paragraph 6.11.

#### 6.10.2 Collective innovation projects of the SMEs of LIV

As regards R&D activities, at the beginning of the alliance they consisted only in the organization of training courses, which are still the main source of innovation provided by LIV to its associates. Actually, representing continuous updates to the newest technologies, they are seen as an important precondition for the competitiveness of SMEs. In this context, the network plays a central role because it allows to share these costs and, consequently, to have access to more courses. Moreover, the broker is for members a further important advantage, because she performs all the arrangements and thus they do not have to lose a lot of time in both looking for new courses and contract with providers.

Since 2010, the consortium has organized seminars on the following topics: LED technology, open innovation, innovative ways to approach the market and increase competitiveness, innovative materials to produce new products, Internet of Things, innovative solutions to improve products performances and practices for increasing the value of the portfolio and thus the competitiveness of firms. All these courses have been financed through European and Regional funds or *voucher aziendali*, i.e. an Italian system to finance the training of employees.

Even though seminars represent the main effort performed by the network for its partners, they are not its most ambitious goal in this field. In fact, LIV aims to pursue research and innovation technology activities. Though, this is not an easy task because on the one hand SMEs are reluctant to both directly invest their money in these projects and collectively discuss these themes. Instead on the other hand, they find difficult the interaction with the academic world, which they perceive as too much theoretical and this represents an obstacle to innovation.

Nevertheless, between 2011 and 2013 five members of the consortium participated to a research project in collaboration with the Engineering Department of the University of Padua and with the Multiphysics Lab of Belluno. The initiative was partially financed by the Veneto region (in particular, by the regional programming called PRO CRO FESR 2007-2013) and aimed to produce lighting products equipped of domotic systems. However, no information are available concerning its outcome. However, the fact that neither entrepreneurs mentioned this experience nor the network website talked about its results suggests that they may have not been valuable.

The recent experience within the ELCA international alliance has allowed to provide new experiences to associates. In particular, during the summer 2015 SMEs had the opportunity to participate to the so called *Business Development Experiments*, i.e. projects directed to the creation of innovative products which use the LED technology and which should improve the health or the wellness of people or make cities smarter. Six SMEs from Veneto (four of which were LIV members) developed three innovations. In particular, two firms of the consortium developed the antibacterial lamp presented above. It is a new product which simultaneously

improves the quality of the light and of the air. Its strengths are the ease of cleaning and use, this is why its inventors have identified hospitals and dental clinics as potential customers. However, at the moment they are looking for some sponsors to support the development of their project for the research and commercialization phases. Another *Business Development Experiment* developed by LIV SMEs in collaboration with the municipality of Bassano del Grappa was a road sign painted with the '*Lighting Surface*', i.e. a new technology which uses a transparent ink which brightens when lit by a LED source. Even though they have already produced such product, they are aware that this technology can be applied to countless sectors and thus they are currently look for potential partners or investors interested in developing this project.

#### 6.11 Venezia in Luce

In this paragraph a different network will be presented. This is because it is considered as interesting since it highlights the limitations that SMEs face to manage global markets and how they try to solve these problems by collaborating with each other. Apart from these purpose, the main focus of this dissertation remains on LIV.

In 2012 eight firms from *Luce in Veneto Sc.a.r.l.* decided to start a new venture in Saudi Arabia and formed a network called Venezia in Luce (VIL) with the same headquarter of LIV.

VIL is a strategic alliance governed by a management committee composed of three entrepreneurs elected among partners. It exerts commercial activity, i.e. it buys products from producers (VIL's members) and resell them after having applied a mark-up. This surplus is not fixed but it depends on the specific order. It is decided by the management committee in accord with the manufacturer, mainly on the basis of the complexity of the production process and of the capacity of plants.

### 6.11.1 The Saudi market

The attractiveness of the Saudi market derived from the speed to which the housing sector of the country was growing in that moment and from the even more positive forecasts regarding its future. This information was considered as interesting for LIV firms since their sector is strictly related to the housing one.

Nevertheless, Saudi Arabia is a difficult venture for foreigners. Actually, it is necessary to have a direct presence there, to possess the necessary certifications for products and to learn how to cope with that culture.

Firstly of all, in particular, a huge initial investment is necessary, but it can be slightly lower if companies rely on a Saudi intermediary. In fact, an enormous amount of money and some local contacts to deal with all the necessary documentation are required to establish a private structure. Otherwise, the presence of a local agency is a cheaper solution, which also makes easier to start a venture.

Secondly, the Saudi market obliges companies to provide their products with the SASO certificate. To obtain it, some tests and the involvement of a specific entity are necessary. In addition to this, taxes to export products are very high. This means that the costs to sell in this country are huge.

Finally, the Saudi culture, according to the classification proposed by Hall (2000), is 'high context', while the Italian culture is more similar to 'low context' cultures. This aspect has important implications also in business transactions, because it implies that interacting before reaching an agreement takes much time and that 'reading between the lines' and knowing non-verbal communication are fundamental skills. More insights about this culture emerged from the interviews and are reported in the following sentences.

*"Saudi people are different, you need to be there. They have to be approached by local people: Europeans are well-seen but Saudi people are however quite wary about them"*

*"Times and mentality of that area are very different with respect of us. What we decide in a month they need a year and a half".*

Thus, having to deal with such a different culture represents a relevant obstacle for entrepreneurs, who are forced to hire a promoter to directly interact with potential Saudi customers.

All these aspects suggest that it is an attractive but very expensive and risky venture for firms. From the point of view of a single SME, it is too complex to be faced on its own. Therefore, collaboration was seen as a suitable solution to make their desire to commercialize in the country concrete. Furthermore, by forming an alliance they would have provided the final customer with all the lighting products he needed, improving in this way their offer and increasing, at the same time, the possibility to satisfy their requests.

#### 6.11.2 The origin of the alliance

VIL decided to ask the support of IBPartners, a consultant company set up in Rome and specialized in the internationalization of Italian companies. The choice of this firm was proposed by the network manager of LIV, who had met some employees of IBPartners during a working meeting. These consultants allowed VIL SMEs to identify both a Saudi intermediary agency and an agent.

As regards this last person, VIL members firstly delineated their ideal profile and secondly they gave it to their Saudi contact who identified some potential applicants. Then, these candidatures were examined by VIL members on the basis of the years of experience in the task, the sectors in which they had already worked and the nationality. Actually, this last feature is important because, as explained in an interview, Saudi people usually are not promoter and their wages are too high; hence, they decided to hire an Indian man. After some job interviews via Skype, VIL members identified their agent.

Consequently, in October 2014 the Italian network decided to hire him but his mandate started in February 2015 and is still ongoing. His role is to propose VIL products to Saudi owners of private villas, which is VIL target, and to inform the management committee of VIL about new opportunities he identifies in the market. In addition, at the end of the month he has to send to the management committee

in Italy a summary regarding his activities. Moreover, when he obtained an enquiry from a potential customer, he has to transmit it to the management committee which has to ask for a quotation to the manufacturer of products. Thus, the role of this team is to examine the initial request and to find the most suitable producer, on the basis of both its offer and competences. The broker receives the estimated price from the manufacturer and sends it to the Indian agent, after having applied the VIL margin previously decided following the above-explained procedure.

To afford set up expenses, VIL members agreed the payment of a monthly fee of about 1000 euros each. This year, since some initial costs have already be paid, this amount has been reduced up to 500 euros. Nevertheless, the initial plan foresaw that the financial autonomy of the network had to be reached within two years but entrepreneurs are still sustain the project with their resources.

### 6.11.3 The evolution of the venture

Nonetheless, from the beginnings of the Saudi experience, some problems arose. For instance, the promoter could not come to Italy and see VIL products, as firms expected, because of some legal problems which blocked him in Saudi Arabia (actually, he has an ongoing legal controversy with the jurisdiction and thus his passport has been confiscated). In addition, his initial attempts to sign contracts with big contractors failed, mainly because of the scarce competitiveness of Italian prices. Despite this, in four months he successfully concluded two modest transactions. Another obstacle, according to VIL members, was that Saudi people need to trust their vendor but at the beginnings the website of the network did not exist and this fact contributed to create suspicion.

In a meeting in the headquarter of LIV (they have not established a new separate office) in June 2015 some problems emerged among entrepreneurs. First of all, they decided not to participate to big contracts but to promote their products to private villas, which owners resulted as a more appropriate target for VIL, since they usually pay more attention to the high quality of products and to the design and thus are willing to pay their price. In addition, some of them expressed the will to abandon

the venture if no sales would have occurred in a year, whereas others affirmed that it seemed more reasonable to wait some time and look for new developments. Moreover, some of them expressed their disappointment as regards the huge time that occurs before new contracts are signed in Arabia and for the pauses that civil and religion events dictated. Finally, they had to solve a problem regarding prices, i.e. a client complained about the different higher price he should have paid with respect to the producer's website, while the promoter declared to sell goods with a valuable discount. In addition to this, initial quotations included shipping costs but long contractual periods combined with change fluctuations determined the scarce convenience of some transactions for them. At the end of the meeting, they granted a slight discount and they decided to start quoting goods 'ex works'.

Two VIL members went to Rihad in November 2015, in order to assess the work done by the Indian promoter. The mission allowed them to understand that his current contacts are valuable and are in line with their guidelines. However, cultural differences are the main reason of scarce effectiveness. The following quote by an entrepreneur expresses the current sentiment among VIL members: *"In the next meeting a deadline for the venture will be decided. This is because smaller firms have started to manifest their disappoint and the initial goal of the autonomy within two years has not been reached"*.

At the moment in which this dissertation is written, they are already waiting for new orders.

#### 6.11.4 Some critical considerations as regards VIL

This small network can be considered as a horizontal alliance, since partners are located in the same stage in the supply chain. More precisely, they perceive them as competitors since they produce nearly the same products, i.e. decorative chandeliers. However, from a marketing perspective, their products satisfy different customers' tastes. Actually, one strength at the basis of their venture in Saudi Arabia is the possibility to jointly create a complete catalogue to provide clients with all the products they desire.

The coordination that member SMEs have chosen for VIL is quite different to the one established in LIV. In fact, partners decided not to rely on a new intermediary in Italy because of the limited number of partners, the uncertain volume of activities to manage (their direct involvement is required only in presence of a concrete interest expressed by a customer) and the limited budget. Rather, they preferred to coordinate network activities mainly on their own, through the management committee, and to interact directly with the promoter in Saudi Arabia. However, all the decisions are taken in the assembly and the favour of all the members is required to approve new dispositions. Moreover, they continue to rely on the same broker of LIV for some bureaucratic practices. For this reason, adopting the taxonomy proposed by Provan and Kenis (2008), it seems reasonable to affirm that this is a hybrid organization form, more similar to the lead one, where decisions are taken by the whole assembly of entrepreneurs and there is not decentralization. Thus, it seems that there is a sort of committee of entrepreneurs but it is composed by all members. The coordination is mainly performed by some entrepreneurs of the SMEs, i.e. the management committee, even if they still rely on an external entity, that is LIV's network manager, which sustains their activities in some limited tasks.

Another interesting aspect is that there is high homogeneity of partners and according to them trust is not pervasive, in line to what suggested by scholars. However, the general impression that the participation at their meetings has offered is that when they need to solve important problems in which relevant resources are invested they adopt a proactive attitude and they are not reluctant to express their opinions and expose possible solutions. Moreover, they have demonstrated to be able to collaborate with each other concerning some big orders and the creation of products' technical drawings without reporting problems. Instead, lack of fairness regarded fees, as some partners missed some payments even if they possessed the necessary resources.

Furthermore, a valuable aspect emerged during interviews is that the sales at network level are more important than the ones at firm level. This means that partners are interested that the venture becomes autonomous and they do not consider the sale of their products as a precondition to join the alliance. Actually, being a commercial entity, VIL obtains a margin for each transaction.

Moreover, concerning the effectiveness of this network, the latter cannot be considered as successful, since initial objectives have not been already met. Actually, the initial deadline of two years when the network should have reached the financial autonomy has nearly elapsed but the self-sustainment is far to be reached at the moment.

Nonetheless, some considerations have to be done. First of all, the partnership has been operating concretely in the market for less than two years, since the agent started his work in February 2015. In addition, an entrepreneur recognized that the lack of a website has represented an obstacle and that some benefits in terms of more trust from customers could have been obtained when it was launched. His words summarizes these statements: *“I think that a company needs two years to enter the market. At the beginnings we did not have a website and Saudi people asked who we are. Having launched the website, they have started to be more confident. There are some steps to follow. The website was launched in September 2015”*. Furthermore, in light of the considerations above-presented as regards culture, it seems reasonable to believe that a longer period is necessary to judge the result of the venture. Unfortunately, literature does not provide valuable insights as regards this aspect; therefore, this case may highlights a gap that could be filled by future studies. However, such gap should probably simply distinguish between high and low context cultures, affirming that this last typology requires a lower period to assess results than the first one. Nevertheless, a precise duration cannot be defined in theory but depends on the single case study analysed.

In this chapter the *Luce in Veneto* case study has been presented. From its analysis, interesting suggestions have emerged and require further considerations, also in view of the literature overview presented in the first part of this work. Thus, this will be the topic of the last chapter.

## Chapter seven

### DISCUSSION AND CONCLUSION

The aim of this chapter is twofold. On the one hand, the concepts presented in the literature overview are used as basis for the analysis of the case study *Luce in Veneto*. On the other hand, starting from the Table 3, a discussion of the results emerged from this network is proposed.

#### 7.1 Types of partners and their role in the network formation and evolution

At the time of its formation, in 2007, the network of firms operating in the lighting industry involved a wide range of actors, spanning from upstream and downstream players in the supply chain to their competitors. They were thus heterogeneous players connected among each other for their business interest in the sector. It was an alliance with features of both horizontal and vertical networks, i.e. a “diagonal network” according to the terminology proposed by some scholars (such as Hinterhuber and Levin, 1994 and Braun, 2008).

Before 2009, different coalitions were set up but they had in common their bottom-up formation process, meaning that the collaborative initiative was taken by entrepreneurs through informal discussions. Instead, in 2009 an opposite formation path occurred, since an employee from the company which arranged the district foundation proposed the creation of the consortium *Luce in Veneto* and, six years later, of the RI LIV. Hence these two collaboration forms were originated by a top-down process.

Moreover, these last two arrangements differ from the previous ones also in terms of the type of members. In fact, the degree of homogeneity among each other in terms of core business is higher than in the previous alliances, which involved all the upstream and downstream players in the supply chain. Actually, when the consortium was founded, members were selected according also to their products, so that to ensure low competitiveness among them. In reality, differences were

mainly in the style or similar features of the lamps and chandeliers that the majority of them produced. In fact, during interviews emerged the general perception among entrepreneurs to be all potential competitors because of the similar products. As explained in the previous chapter, the RI LIV is opened to more business activities and this should favour heterogeneity of partners. However, at the moment, the 85% of its members are lamps producers but it has just been formed and thus it seems too early to advance judgements. Hence, both the consortium and the RI LIV cannot be considered as (wholly) heterogeneous network.

As underlined in the first part of this work, the type of partners represents a relevant aspect which has a direct impact on the acquisition and the exploitation of knowledge and on the formation of trust.

Actually, if partners are similar the learning which flows within the network is less 'novel' and this fact negatively affects the potential for acquiring and internalizing different skills and practices from partners. This finds evidence in the case study analysed. In fact, members affirmed to have acquired knowledge only from training courses, meaning that they have not used members' skills to increase their know-how and thus improve their processes. However, a member which does not produce lamps reported of some problems which were rapidly and cheaply solved by simply talking with a partner with different skills. Moreover, as regards the *Business Development Experiments* presented in the previous chapter, their realization has been possible thanks to the combination of different unique capabilities. This denotes that where heterogeneity occurs, it is possible to reach the results suggested by scholars.

Concerning the formation of trust, literature recognizes homogeneity of partners as an obstacle. However, as stated in the previous chapter, trust is an ambiguous point in LIV. Actually, the majority of partners affirmed that there is not complete trust among members but, at the same time, they reported many relationships characterized by high trust, regardless of the type of activity performed by actors.

### 7.1.2 Heterogeneity of partners and the new regional legal framework

The new regional legal framework offers some opportunities to contrast homogeneity. Actually, the candidature of the RIR *Venetian Smart Lighting* implies the involvement of all the actors linked to *smart lighting* issues, forcing in this way a more heterogeneity among partners. This paragraph highlights the possible future developments in the network.

Higher heterogeneity should bring to a wider range of skills available at network level. For instance, the alliance with manufacturers of complementary products may result in the design of whole projects for customers in which different items are combined in the best way to meet each taste. Moreover, new collaborations for the production of new innovative products may arise, as happened with the *Business Development Experiments*.

This last example suggests another potentiality which could derive from heterogeneity, i.e. an incentive toward innovation. Actually, there is a general opinion among entrepreneurs that this is a sector which does not leave the opportunity to innovate, a part from the technologies related to the sustainability such as the LED. However, it seems hard to think about limits to innovation and the joint work with external players perhaps will be useful in helping firms in reconsidering their ideas and looking for new innovative frontiers. Of course, this is the reason why the innovation manager has been appointed within the RI LIV but the involvement of different sectors would support his role.

From the point of view of trust, the alliance with manufacturers of different goods could reduce the current reluctance of firms toward sharing while encourage both the fair exchange of information and the opening of plants. In fact, according to an entrepreneur, this last point was the cause of the failure of LIV in starting collaborative actions in terms of logistics.

The heterogeneity of members was also suggested during an interview as a way to improve the network experience. However, the same person saw the *smart lighting* issue as a constraint rather than as an opportunity, which would bring not relevant variety of partners. Nevertheless, it should be noted that this is a wide concept

which can include many business activities, especially if considered that the admission criteria are flexible and opened to the dialogue. Thus, it seems reasonable to believe that the new regional legal framework represents an opportunity to improve underperformances brought by the high homogeneity of partners.

## 7.2 Formal and Informal collaborations

Since the first collaborative arrangement, partners formed formal strategic alliances through legal contracts with the aim to establish strategic business collaborations. This search for formalization seems to reflect three purposes: their determination in pursuing effectiveness, the will to prevent disappointments and misunderstandings and the need to comply with the laws which give access to grants.

Concerning the first point, the presence of a manager, an assembly, a board of directors and clearly defined roles and procedures reflects members' determination in reaching the established goals. This was confirmed during the interviews, when some entrepreneurs affirmed that valuable procedures are necessary to ensure them updates and other information on time and to make more likely the fulfilment of projects. This found evidence also at the beginning of this year, when the figure of the innovation manager was introduced to better comply with the new regional legal framework.

Moreover, as regards the second point, the fact that partners know in advance how decisions are taken and how to advance proposals favours the perception of transparency and thus helps to prevent ongoing complaints.

Finally, as regards the third point, the choice of many specific collaborative arrangements above presented (such as the *Aggregazione Temporanea di Scopo*, the industrial district and the RIR Venetian smart lighting) was clearly driven by the need to comply with the legal framework upon which depends the possibility to obtain funds and thus to fulfil network activities. Actually, the Veneto Region and the European Community are the main providers of the grants that the network receives and thus it considers as fundamental the alignment with their decisions.

Nevertheless, also informal relationships occur among partners. In fact, an entrepreneur affirmed that the network offers the possibility to know partners and exchange information without the involvement of any kind of formal agreement. However, this type of relationships happens only among some partners, usually who share the same philosophy or who regularly have business relationships.

### 7.3 Preliminary conditions and evolution of LIV

This case study confirms the theory advanced by Powell (1990) that there are some conditions which foster the formation of networks and determine the advantages that members can obtain by collaborating. In particular, looking at LIV, know-how, demand for speed and, to some extent, trust can be recognized.

Concerning the first element, it was said that the majority of partners produce lamps or chandeliers which present some differences among each other. In particular, these can be found in the materials used (some are specialized in items made of metals, others instead use Murano glass, Swarovski, ceramic, gold etc.), in the design or in the style (i.e. modern or classic). In addition, within the network about the 10% of firms are service providers while the 5% sell technologies. For instance, this is the case of a partner which is specialized in the sole production of LED. Lamps producers find in him the provider of complementary skills and thus they can manufacture highly performing products which combine different specific knowledge. This is possible because they can concentrate their efforts on the improvement of their competences and rely on skilled partners for the ones they lack. Other examples are the *Business Development Experiments* and the sharing of information to solve problems, as explained above. Therefore, it can be concluded that within LIV, even though the heterogeneity of partners is limited, it has been possible to find different skills and this represents a valuable factor which probably influenced the formation of the network and which has allowed members to reap some benefits from their participation.

As regards the need for speed, entrepreneurs have affirmed that the network allows them to learn about new innovations before the spread of these technologies in the

market, so that they can arrange products and bring them on the market on time. From their point of view, this aspect is of crucial importance, since it increases their probability of market success. Thus it seems reasonable to think that market speed has represented an incentive for members to start collaborating.

Finally, Powell (1990) claimed also the importance of trust to share partners' heritage and exploit network advantages. As widely underlined, this has been a debated topic in the lighting network. In fact, even though entrepreneurs affirmed that there is not complete trust among each other, they also talked about regular relationships both in terms of client/supplier interactions and information exchange. These regular interactions inevitably have contributed to the formation of trust. Thus, even though lamps producers perceive a general reluctance concerning this topic, which seems reasonable if considered the similarities in their products and markets, they also reported concrete experiences of trust-building.

### 7.3.1 The determinants of the network's evolution path

Analysing the evolution path of the network, some considerations emerged.

First of all, the initial members of the BoD were entrepreneurs from the biggest SMEs, thus suggesting an initial search for legitimacy, as suggested by scholars. However, the fact that different people from various firms have been appointed during years reflects the high importance given to change. This was confirmed during an interview, when an entrepreneur affirmed that her father was appointed as a BoD member many times but then it was replaced because changes are strategic to avoid a steady network development.

Secondly, within this network partners seem to play an active role in advancing their proposals and thus influencing the activities organized at network level. Actually, each of them can bring his ideas which are then translated by the network manager into offers to the other partners, after having assessed their congruence with the general goals established. However, the fact that entrepreneurs affirmed the importance to actively participate to network assemblies and imputed their

complaints to the scarce involvement in the initiatives suggest that this previous control is not perceived as an obstacle and that they feel to be heeded.

Another important theme which emerged from this case study is the indirect but relevant influence of political decisions on network activities. The reason of this linkage is due to the fact that politics decide the allocation of the grants to which network's activities depend. Therefore, it can be said that politics have indirectly influenced the network development in two ways: the legal arrangements adopted and the topics of the training courses offered by LIV. In fact, even though the organization and the participation to seminars organization are decided at network level, their contents are previously filtered at political level according to the strategies above mentioned.

### 7.3.2 Goal directedness and serendipity

This paragraph analyses the development trajectories of the alliance in the lighting sector under another perspective, which distinguishes between goal directedness and serendipity.

All the various network arrangements presented above were formed and performed through precise actions to reach well-defined strategic purposes and this fact gives more insights to the presence of a centralized structure and of a network manager. To use the terminology proposed by Kilduff and Tsai (2003), this network trajectory can be called goal-directedness. However, even when goals were accomplished, interactions among LIV members persisted thanks to the ties created among actors and to the presence of the formal structure (i.e. the manager and the BoD) until new strategic purposes emerged from members. The same authors defined a similar trajectory as serendipitous, with the difference that in their theoretical conceptualization serendipity substitutes even the presence of a network manager and a board of directors. Therefore, it seems correct to state that LIV has had a hybrid evolution route, characterized by features of both trajectories.

#### 7.4 The governance of the network

From the point of view of the governance form, it is evident that LIV is a brokered network in which decisions are centrally taken by the board of directors, composed of members appointed to choose which strategic projects perform. However, these strategies find their source in precise requests that member firms express through assemblies or face-to-face discussions. Hence, it can be said that they adopt a decision-making process which starts from the “bottom” and then is formalized by the people at the “top” of the alliance. This can be seen as a way that partners have adopted to limit the risk that members of the BoD act opportunistically and dominate the network through the pursuit of their personal interests.

By recalling the taxonomy developed by Provan and Kenis, (2008), which was proposed in the chapter four, it can be said that LIV is a brokered network characterized by a high centralization. More precisely, it can be considered a hybrid governance form with features of both the lead organization and the NAO type. In fact, all the decisions are taken by a narrow group of entrepreneurs elected with the majority of votes (these depended on the share of the joint stock possessed by each firm, in the consortium and on the number of people, in the current legal arrangement, i.e. the RI LIV). However, there is an external person, the broker, who performs administrative, management and support functions. Her activities are constantly monitored by partners (mainly the BoD members), with which she is regularly in contact. The choice of this combination of roles (i.e. the decisional power to the members but all the other activities to the manager) finds its roots in the will to ensure effectiveness while maintain control over network development. In this case, the power centralization is not an obstacle for spontaneous actions from partners, who can make their proposals at any time as noted above. Then, these are examined with the BoD and after translated into new initiatives which are communicate to the other partners usually through the newsletter. In this way the network increases the fairness and avoids that new strategic opportunities are lost.

Such governance form was established in 2009, when the consortium was funded and has remained nearly steady over time, even when in 2016 the legal form changed. Actually, the BoD became the so called ‘management committee’ but its

functions have unchanged. Moreover, an innovation manager was appointed with the role of incentive and coordinate those initiatives concerning innovation.

Some entrepreneurs criticized the way in which the consortium was managed, since bigger firms had more decisional power. This is true but it was a consequence of the fact that bigger companies possessed a wider share in the joint stock, i.e. this asymmetry of power was the result of the legal form chosen. On the contrary, the recent legal arrangement has solved this problem since all the partners now have the same decisional power. This change has met the favour of smaller firms, which perceive more fairness among members, while has not provoked disappointments by the partners who had more incidence in the previous assemblies. This last consideration is in line with the fact the shares of outgoing firms represented a problem in the consortium, since no one wanted to buy them. To conclude, thus, it can be said that the sole tension which emerged concerning the governance form was solved successfully.

Now the model provided by Provan&Kenis is used to examine the determinants of the effectiveness of the governance form.

- Trust. Before the alliance formation, some partners knew each other while others not. Therefore trust at the origin of the network was not pervasive among members. Obstacles to its formation within LIV have proved to be the low heterogeneity of partners and the culture of people from the Veneto region, as underlined by nearly all the interviewees. Therefore, even though many partners trust each other in practice and no evidences of opportunistic behaviours have been manifested, since the beginnings they have chosen to rely both on the network manager and on a structured organization to manage trust gaps. Of course, the fact that this lacuna has not been filled yet means that more efforts should be done in this direction.
- Number of participants. The number of members of LIV has never been lower than thirty-eight. This justify the presence of both the BoD and of the network manager. Actually, considering the scarce free-time of entrepreneurs and the difficulty in reaching an agreement among many

people, the brokered governance form in this case appears as an obliged choice to preserve effectiveness. Otherwise network failure would be more likely, as confirmed by entrepreneurs who reported of some direct experiences.

- Network goal consensus. At network level goals are decided by the assembly thus the consensus is always assessed before starting any activity. This is an effective way to avoid ongoing divisions or disappointments and thus to favour the duration of the alliance. Instead, at firm level, even if not declared, goals are likely to be very similar due to the high homogeneity among partners. This hypothesis seems reasonable if considered the reluctance in sharing some information and/or the scarce collaboration of some partners.
- Network-level competences. As underlined many times in this chapter, the high homogeneity of partners does not favour the presence of many different competences. This is true even though examples of the sharing of competences has occurred over time, such as the *Business Development Experiments*, the fulfilment of big orders or the involvement of partners' skills to comply with the high degree of customization required by customers. In these cases the network was useful to fill competence gaps but these were only 'spot' collaboration, i.e. limited to that particular case but do not originated regular interaction. The reason why low variety of competences has not affected the alliance effectiveness in a relevant way is that this sector is not particularly innovative at the moment and thus there is not a high demand for new and different competences. This was stated by many entrepreneurs during interviews. However, the fact that the network is now trying to implement innovativeness and, at the same time, it is opening its boundaries to firms from other sectors appears as a coherent strategy which is likely to bring to new competences while preserve effectiveness.

Therefore, from the analysis of the four variables suggested by Provan&Kenis, the adopted governance form seems appropriate for this network.

### 7.5 Mechanisms of coordination

In the network analysed the main mechanism of coordination has proved to be the network manager, who successfully accomplishes her intermediary role of coordinating both activities and interactions among partners. Instead, the role performed by the BoD/management committee does not concern coordination. Members' strong reliance on the figure of a manager for coordinating their actions was manifested also when this year the new need to enhance innovation brought to the appointment of an innovation manager.

In addition, because of many partners are clients or suppliers among each other, there is a constant monitoring which discourages both opportunistic behaviours and low performances. The same role of deterrence of unfair behaviours is played by the high probability of future interactions. Actually, the fact of being part of the same network determines that unsatisfactory performances would be rapidly communicated by all the members.

Even the few informal trusting relationships established among some members have some implications in terms of coordination, since they imply flexible interactions and without the need of any formalization.

Moreover, the presence of a highly-formalized governance structure makes easier the coordination since roles and procedures are clearly agreed at the beginning of the alliance. This search for formalization, combined with the choice to appoint managers, reveals an awareness of the importance to have a solid internal structure. Formal contracts, instead, are not widely used but are substituted by the other mechanisms above-presented. In fact, entrepreneurs when possible avoid their adoption since it implies more complexities and rules and thus they inhibit the advantages in terms of flexibility that networks should provide.

An limit to the coordination of collaborations among firms was identified by an entrepreneur, who considered the scarce involvement of employees from different firms during training courses as a relevant inefficiency. Actually, in this way they cannot learn how to work together and thus they are not able to jointly coordinate projects.

## 7.6 The network manager

The network manager was initially hired by the firms which constituted the *Associazione Temporanea di Scopo* to coordinate their activities. Then, having considered useful the figure of an intermediate, they have continued to trust her in all their collaborative experiences.

Within the network, apart from coordinate the activities and develop projects, she meets external specialists for implementing collaborative projects, asks for offers to external firms, elaborates projects and candidatures to public announcements, performs administrative functions and eventually communicates opportunities to partners.

She interacts with all the partners and the fact that they perceive her presence as *super partes* makes easier their sincere disclosure of judgements and this in turn improves her perception concerning partners' opinions. The direct consequence is that she has a real impression of the feelings of partners and this is useful to detect possible problems and adopt remedies on time. Actually, no one talked about disputes at network level.

During the interviews with entrepreneurs, all of them considered her role as fundamental. The following sentences express their point of view.

*"The presence of the coordinator who invests her time is necessary to avoid occasional and unplanned actions. This is not the right way to manage a firm. She has to decide which products are more suitable for which company. She has to press for receiving answers. In this way she provides support and stimulus because she ensures effectiveness. Otherwise, they are all gabs."*

*"Concerning announcements the consortium plays an active role by informing and sustaining candidatures even in terms of the necessary documentation. Firms are of micro or small size and it is difficult to cope with the bureaucracy. Without the network manager it would be definitely more difficult."*

*"Her presence is fundamental. Actually she is perceived as super partes and thus each partner can trust her. Otherwise reaching an agreement would be impossible because building trust among members requires time. In the past I participated to*

*non-coordinated networks but this fact brought to the network failure. It is necessary to appoint a manager and that all members pay her in the same way to ensure effectiveness. Therefore I think the network manager is fundamental... She has to teach parties to collaborate and this depends on her capacity.”*

Some interviewees attributed to her the role of helping to remove reluctance in the collaboration among members. This is a problem strictly related to the pervasiveness of trust within the network and the fact that many collaborative projects have been performed so far regardless of these obstacles suggests that she has accomplished her role efficiently. However, this does not mean that new projects to support trust formation could be planned at network level in accord with partners (which have the decisional power).

### 7.7 Some considerations concerning the case study

This section presents some personal observations that the writer has made as a result of this work, in terms of both literature review and empirical investigation.

In general, entrepreneurs judge positively their collaborative experience, even if some of them think that not all the potentialities have emerged so far. Their main expectation concerning LIV is making their job easier. This means that they need a support to know their business environment, deal with the bureaucracy, engage in international ventures and be always updated about announcements and possibilities to receive funds. Instead, training courses and other outcomes are seen as additional benefits, which give access to more competences and opportunities and thus improve their degree of satisfaction concerning the alliance. Some important aspects are now commented.

#### 7.7.1 Considerations concerning the impacts at firm level

The first outcome that entrepreneurs report is usually the valuable business environment that the network offers. In fact, through its activities it puts members in contact with potential clients, suppliers, competitors and institutions overcoming in this way the small size constraint, which forces entrepreneurs to spend the

majority of their time within their firms. Sometimes, contacts are created thanks to the initiative of the network manager, who informs the parties involved when she identifies some opportunities.

This is very important for all firms but particularly for the ones at their initial stages of development, which neither know how to approach some businesses nor are notorious in the market. Thus, they can exploit already established contacts of partners as a direct channel to easily talk with the right people outside the network. Talking about the relevance of this point, a start-up entrepreneur explained that these mechanisms usually result also in a higher interest from the external actor, who is more prone to listen to the unknown interlocutor because he represents a suggestion received from a friend and thus a valuable advice.

These considerations are strictly related to another theme emerged in the empirical study. Actually, the fact that the logo of the network appears in some member firms' websites suggests that they exploit their participation to the network to gain external legitimacy.

Internationalization is fundamental for the firms of LIV. This is a process they face mainly in terms of commercialization, since nearly all of them rely on an Italian supply chain which is, in most cases, limited to the sole Veneto region. This is mainly a strategic choice, as customers look at the Made in Italy as a valuable feature which increases product's value. Furthermore, once entrepreneurs decide to follow this upstream strategy, the Veneto region frequently represents their main supply area because there is a high presence of actors operating in the lighting sector, as underlined in the chapter 6.3, and the geographic constraint allows to reduce delivery costs.

Nevertheless, concerning sales, they mainly look at foreign markets and this is in most cases a forced choice. Many are the reasons of this international focus. First of all, products are usually located in a medium-high price range and this makes Italy an unfavourable market. Actually, as explained by an entrepreneur, Italian people have reduced their house expenditure and thus LIV offer is usually perceived as quite expensive.

Secondly, some products naturally meet tastes of foreign customers. This is the case of a firm which produces lamps inspired to Mariano Fortuny, i.e. a Spanish painter. This is also the case of the ceramic producers in Bassano del Grappa or of a company which appliques have the shape of a pomegranate, i.e. the symbol of Argebaïjian. These are all decorative items for which the Middle East is the main market. Instead, modern products typically find the favour of European and American people.

Finally, the geographic expansion is a way to mitigate the risks associated with markets fluctuations and products acceptance. This finds its consistency in the fact that when entrepreneurs talked about their international presence they always referred to this aspect. For instance, one company explained the difficulties brought by the Russian embargo and the importance of having had a widespread presence in the whole Russian territory to mitigate the huge decrease in sales. The same partner also used the situation of the Iranian housing market to justify the scarce performance of his shop in Tehran.

LIV SMEs see the network as a valuable way to sustain their presence abroad since they can benefit of the collective participation at fairs and of the necessary funds to engage in additional expositions, missions or other strategies also concerning the improvement of their marketing function. Otherwise, they could not afford their current international presence, which is fundamental for them, as just explained. Moreover, the collective arrangement of international ventures provides customers with a more complete catalogue, thus further improving SMEs competitiveness.

While when talking about globalization entrepreneurs had a clear idea of what to say, concerning innovation they always had to think about the answer. This seems to reflect both their general opinion that the lighting sector is not an innovative one and their difficulty in recognizing this process within their firms.

As regards the first point, the main competition faced by the majority of partners is more on the design than on the technology and the same interviewees affirmed that their sector is not characterized by frequent technological changes. They believe that there is space for product innovation only concerning the bulbs. However, even though LIV members are aware of the increasing pressures in favour of low electric consumption, many of them have affirmed that these considerations are not in line

with the demand they face, such as the one from Russia and Middle East. In fact, customers from these regions usually are not sustainability-sensitive and thus they are not interested in saving electricity. For example, a partner affirmed to have been obliged to correct an order because of the presence of energy-saving bulbs. This reject in the demand side causes the scarce interest manifested by some partners toward these innovations.

As to process innovation, members explained that their crafted goods require a production process with many handmade phases and even if they use few machineries they never talked about the will to substitute them. Interestingly, a company from Bassano del Grappa allowed to visit its laboratory where products are created by hand with the same process that was adopted at the time of the company foundation, in 1960.

Furthermore, none of the interviewees talked about the improvements in their marketing function adopted thanks to training courses, thus confirming also the second point.

After having encouraged more times the disclosure of information as regards innovation, entrepreneurs started to talk about some experiences of collaboration with other partners and external research entities. However, a part from the *Business Development Experiments*, their approach was always vague and they never referred to outcomes and their commercialization. This aspect is strictly related to the second point too. In fact, when it was asked to entrepreneurs their feeling concerning training courses organized at network level, they easily provided precise replies. In particular, they talked about the improvements on their marketing function (i.e. incremental innovation), the new products developed (i.e. product innovation) and other information received which are necessary to arrange products on time so as to preserve competitiveness. Instead, they never associated these experiences with their real name, i.e. the acquisition of learning and the creation of new combinations.

Thus, it can be said that LIV represents for its members the *locus* of innovation where learning is created to improve firms' competitive position, as suggested by

many scholars. Nevertheless, a sort of myopia emerges from entrepreneurs who seem not able to recognize the outcomes obtained as innovation processes.

Another interesting aspect which arose from conversations with entrepreneurs is that, apart from some updates adopted to obtain certifications, they rarely talked about internal R&D activities, considered by scholars as essential to understand the knowledge provided by the network. They always justify this lacuna talking about the huge costs required. Nonetheless, an economic reasoning appears not coherent, considering that all of them have engaged into international expensive processes. Rather, it seems a matter of both priority and risk. In fact the perception of low sector innovativeness, combined with the certainty about the importance of a global strategy, results in the investment of SMEs resources in international projects. In addition, the initial considerable outlay, linked with the difficulty in recognizing concrete research outcomes, the non-immediate results and the sharing of information it implies, results in a too high perceived risk that a collective action, in this case, is not able to mitigate. It is important to remark that in general the risk perceived concerning innovation activities is high but LIV members cannot be defined risk averse, considering that they participate to many international (uncertain) ventures, such as the one in Canada. Finally, the lack of internal R&D activity will probably have detrimental effects also in the future, since the current network policy pushes for innovation. Actually, the fact that firms do not perform their own research makes more difficult their understanding of external research and this probably would further delay advances in terms of innovation.

To conclude, at the moment innovation is not perceived as a priority by LIV SMEs but recent developments suggest that this trend may change soon. Actually, the transformation of the consortium in RIR opens the network to a broader range of firms involved in the production on related products and this can expand the network competences, which are considered a precondition for innovation. Moreover, the just appointed innovation manager is making efforts in this sense. Even though so far few new partners have entered the collaboration, contributing to the absence of relevant changes, it seems inappropriate to consider such recent events as representative of the future development path of LIV, especially if considered the fact that the RIR has not fully been formalized. Therefore, it would be

interesting to review this analysis in the future to assess whether the development path of the network has changed.

In any case, a change in partners' mentality is necessary. Actually, all network efforts will not be efficacy if entrepreneurs continue to refuse any collaboration in non-marketing topics. In addition, as underlined by the network manager, it is necessary to implement some actions to change partners' feeling concerning the research world, which they still consider as far from their practical world and as a more uncertain activity with respect to internationalization, maybe due also to the success experienced with globalization. Finally, a less individualist approach would transform the current environment in a more dynamic and collaborative one.

Going back to the literature review it was said that innovation and internationalization are today two overlapping strategies. However, this has not emerged from this case study. In fact, many firms pursue the two strategies separately and while they are reluctant toward innovation they instead appear very proactive when talking about foreign markets. In reality, this seems true for technology-based firms, where the rapid innovation is crucial to stay competitive both at national and international level. Thus this is not the case of LIV SMEs, which at the moment do not consider innovation as a priority.

In the previous paragraphs both the similar know-how and the condition of being potential competitors (i.e. low heterogeneity of partners) were used to justify the reluctance of partners in collaborating in non-marketing activities and it was affirmed that the RI LIV could represent a possibility to overcome this limit.

However, another interesting contribution could be provided by the participation of employees to training courses with their colleagues from other companies. A consultant partner criticized that rarely employees are involved into training seminars. Thus, it seems reasonable to affirm that if they start to take part to these training sessions they learn how to collaborate and they have the possibility to improve their skills thanks to the exchange of opinions with their colleagues which are used to work in similar (but inevitably different) environments. For these reasons this seems a valuable way for leveraging the innovation potential of LIV. In

fact, as suggested by literature, it is at the intersections among different skills that innovations occur.

Other important performances concerning the participation to LIV have emerged in terms of speed, coalition and economic support. These are all outcomes that make the LIV experience as satisfactory and the network arrangement as valuable for supporting SMEs activities.

Considering statements from entrepreneurs, time is an important variable which matters in all the SMEs activities and which makes the participation to the network more appealing, as underlined in the paragraph 7.3. In this context, the network manager plays a strategic role in avoiding partners to spend their time in searching for information by sending them promptly to all members in time. Moreover, even if it is still limited, the exchange of information is relevant too, as rapidly provides contacts and problems solutions. Interestingly, time was also the first benefit claimed by an entrepreneur when he talked about the development of a product innovation in collaboration with other partners.

Furthermore, taking into account the considerations as regards members' culture and their attitude toward both sharing and trust, it is interesting to note that high level performances have been obtained also in terms of coalition, meaning that partners have sometimes been able to overcome these reluctances and recognize that the alliance allows to reap bigger benefits than going solo. For instance, members affirmed that they were able to satisfy big orders by sharing the work that a single actor was not able to perform by acting independently. This is very interesting because they have demonstrates to be able to successfully collaborate and to obtain high level performances even in non-marketing functions. This is valuable also from the point of view of trust. Actually, asking the support of a partner to satisfy an order from a client both avoids to lose an important income and reduces the transaction costs required to search for an unknown external firm. However, this is possible in the extent that the partner trusts his colleague and is confident that he will neither try to gain a new client nor perform the task badly. Otherwise, the partner never would ask his support with the risk to lose his

reliability. Consequently, a major sensitizing to these aspects would probably be useful to transform these sporadic outcomes into habits.

Finally, there is no doubt of the relevant financial support received by SMEs. Actually, it is notorious that institutions provide grants to sustain small businesses. However, to obtain them a first obstacle is represented by the high bureaucracy represented by specific deadlines and documents, which firms often find complex to respect and fill in. Moreover, these economic contributions are more easily granted to networks rather than to single firms, since they allow to reach a higher number of people and thus being part of alliances undoubtedly represents a favourable condition. This confirms the fact that one of the priorities of the just formed RIR Venetian Smart Lighting is to involve as many actors as possible. This goal is clearly related to the need to involve an important part of the region and thus to favour the obtainment of funds.

Furthermore, considering the relevance of internationalization for LIV SMEs and the costs associated with the necessary certificates, certifications often represent a support that partners cannot miss if they want to export their products. This is confirmed by a partner who affirmed that the recent network efforts on this field have been crucial to his participation to the RI LIV.

#### 7.7.2 Some considerations concerning network effectiveness

Regarding effectiveness, LIV has reached its goals even if with different extents. As concerns internationalization, it can be said that the network has given access to a wide range of global ventures to SMEs.

A similar positive judgement can be expressed for the broadening of contacts. This purpose initially was limited to the lighting sector of Veneto but the new RI LIV is going to overcome this constraint, as explained in the previous chapter.

Concerning the R&D, these activities have been performed mainly through training courses offered by the network while only one different experience which involved some partners and an external entity was established. However, as already underlined, the scarce emphasis put by a partner suggests its scarce result.

Moreover, firms do not perform internal research and this negatively affects their capability to understand information from the network, as suggested by scholars.

Finally, concerning the establishment of a shared logistic function, this goal has been partially obtained if the logistic channel which connects LIV with the Rumanian market is considered. Nevertheless, this is mainly an internationalization project while the initial purpose consisted in sharing daily transports.

During the interview with the entrepreneur who promoted this goal, he affirmed that in the past he had made some attempts in trying to share some deliveries with the partners he usually met when moved for work. However, he never found the favour of partners. He explained that entrepreneurs are reluctant to engage in such activities even if they would bring time and cost savings, since employees can remain at work and the costs of the fuel would be shared. He found the reason of this inefficiency in the individualist culture of Veneto people, who are strongly adverse to join something with partners.

A part from the cultural component, this behaviour is also in line with all the considerations above presented concerning the competitiveness among the majority of LIV members.

Nevertheless, the missing of the logistic goal confirms that the network offers relevant advantages to members but the choice to reap these benefits or not depend on partners. If individualism will be overcome probably this last goal will be reached too. Maybe visits to plants and a sensitization campaign which highlights potentialities would be useful to change entrepreneurs behaviour. Visits favour partners' awareness regarding both the capabilities possessed by other members and the differences in the activities performed. In fact, a perception that emerged by talking with entrepreneurs is their scarce knowledge about the skills possessed by firms and the fact that their judgements are mainly based on their suppositions. This can be confirmed by the interviews with a members who proposed the creation of a database to collect all the skills possessed by the network, to make easier identify potential partners.

### 7.7.3 Considerations concerning the dynamics observed at network level

In addition to the outcomes that each member has reaped, the empirical study has allowed the identification of the dynamics that happen at network level and make possible these benefits. They are ambiguity of relationships among members, governance arrangements and direct involvement of partners. It seems that these are suitable combined to allow the network to work. This paragraph proposes some reflections on these features.

Concerning the first point, the fact that relationships are ambiguous represents an obstacle to the full exploitation of network potentialities. The main problems are the individualist Veneto culture and the low heterogeneity of partners.

As underlined many times in this work, this last point naturally affects the pervasiveness of trust within the network and also the full exploitation of the potential information flow. However, the collaborations with partners which do not manufacture lamps have produced both new combinations and useful knowledge transfer, confirming in this way what theorized by scholars. In addition, among some partners trust has brought to spontaneous information exchanges even if they could be considered as competitors.

Instead, the cultural aspect was not considered in the first part of this dissertation. Though, after a brief overview of literature (Doney, Cannon and Mullen, 1998; Huff and Kelley, 2003), evidence that trust is more pervasive within collectivist rather than individualist cultures was found. Europeans are considered as individualist in such classification (it is the one proposed by the scholar Hofstede). Moreover, some affirm that collectivist cultures (such as Asian people) strongly rely on the group and are more reluctant to trust external agents with respect to individualist ones, because they have an 'in-group' bias which affects their trust on outsider actors (Huff and Kelly, 2003). These statements seem to reflect what happens in LIV, as trust is not pervasive and collaborations with external partners are encouraged by members. However, the fact that new actors from external sectors will probably enter the alliance represent an opportunity to reduce the reluctance toward sharing. From the point of view of the management of the consortium, some meetings could

be organized to emphasize the higher benefits that a more intense collaboration would bring.

In any case, as already noticed, it must be recognized that important inefficiencies due to this ambiguity of relationships have not occurred, meaning that the adopted coordination mechanisms properly manage this gap. In fact, where trust lacks among LIV partners only spontaneous actions are inhibited.

As regards the second point, the governance in LIV is highly structured with clearly defined roles. This has demonstrated to be a successful strategy since no disputes have emerged even if partners denounce a high potential for competitiveness and the number of members is quite high.

Moreover, considering also their small size and thus the scarce availability of entrepreneurs to manage activities outside their businesses, the network manager has demonstrated to be crucial to put partners in contact and to create a satisfactory network perspective.

Furthermore, the presence of both a manager and a management committee is in line to what affirmed in the paragraph concerning the governance of networks, i.e. that when the internal knowledge is poor (lamps differ mainly on design, style and material but the technological component is nearly the same) a certain degree of centralization is necessary in order to protect corporate technologies.

Finally, taking into account the third point, the importance of an active participation has emerged. This has proved to favour both the perception of fairness and of satisfaction among members. All the members which expressed disappointment concerning some network decisions affirmed that it was due also to their scarce involvement into network activities. They also declared that they are planning to increase their presence in the assemblies and at training seminars. Moreover, one of them noticed that this was one of the reasons for which he joined the RI LIV.

Another interesting aspect which emerged by talking with entrepreneurs is that they always adopted a proactive attitude, searching for possible solutions to inefficiencies. This behaviour seems to reflect both their will to continue the alliance

and the perception that their opinions matter. In fact, otherwise they would adopt a less involved line.

Thus, considering both the statements of entrepreneurs and their proactive attitude it can be said that the direct participation of members is an important dynamic which characterizes LIV.

### 7.8 Conclusion

Scholars have widely discussed the importance for SMEs to engage in network collaborations to overcome their natural constraints. The relevance of this topic is given by the net prevalence of these firms, which only in the Veneto region represent the 93% of the total companies operating in the lighting sector (source: AIDA database, my elaboration). The Italian government in 2012 developed a legal framework to cope with such a widespread business environment and introduced the network contract. Its effects on SMEs, looking at the study reported in the paragraphs 6.8, appear as positive as it gives access to a wider range of activities, thus concretely supporting their business.

The aim of this empirical analysis was to assess whether the SMEs embedded in the lighting network Luce in Veneto have reaped benefits from their participation, with a particular focus on the innovation and the internationalization processes. The interest on these two variables emerged during an internship at the consortium in the summer 2015, when some of these activities were observed. In the previous chapter the results obtained were shown.

LIV is undoubtedly advantageous for its members which have listed many benefits obtained from the alliance. Innovation and internationalization are two of them. However, SMEs give more importance to the second one and they are always looking for new ventures abroad. This is due to the fact that the majority of their turnover comes from abroad but without the network their presence into foreign markets would be limited to few essential fairs.

Instead, concerning innovation, they have developed some product and process innovations thanks to the training courses organized at network level while the research activity has not appeared their main focus. The various reasons of this

lacuna have widely been described in this dissertation and consist mainly in the low innovativeness of the sector, the high homogeneity of partners, the Veneto culture and the uncertainty of outcomes.

A crucial contribution given by network in terms of knowledge acquisition is the organization of seminars. They are appreciated by partners who however are not able to recognize them as the source of their innovative activities.

An interesting observation emerged from this analysis is that these sessions are provided to partners thanks to contributions from political institutions. This means that politics have a strong influence in their contents, which can thus be considered as 'filtered' from authorities. Of course, the reason of this filter is due to their need to perform the strategies they have identify as necessary to reach their development goals. In any case, courses have proved to be useful even though the benefits reaped by LIV members have been limited because of the reluctance of partners in collaborating in non-marketing topics. In fact, this study has demonstrated that high homogeneity of partners inhibit the innovative potential of networks, as widely stated by scholars. However, it has also highlighted that many inefficiencies can be mitigated if the proper governance form and coordination mechanisms are adopted. In this case, the network manager, the constant control, the probability of future interactions, the highly formalized governance structure and the few trusting relationships have proved to ensure a high degree of network effectiveness. In particular, the role of the coordinator has been considered as fundamental by interviewees for both her competences and her *super partes* position, which both pushes members to disclose their opinions and preserve the perception of fairness.

Inefficiencies had thus emerged in terms of low innovativeness and scarce spontaneous collaboration, which is perceived by members as scarce fairness. As regards the first point, the presence of the innovation manager has recently been appointed with the aim to improve this process. Moreover, the involvement of more external actor should reduce more partners homogeneity and thus encourage collaboration in non-marketing functions. This is a picture of the probable future developments that the network will face.

Concerning instead the scarce spontaneous information sharing among partners which are embedded in the network but have not developed confidence among each other, it seems that the organization of both visits to plants and meetings to explain the potentialities offered by a more intense collaboration, would be two strategies useful to overcome this difficulty. Actually, the experiences of joined work prove that they are able to overcome the cultural constraint that all of them have claimed.

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