

“PUBLIC” AND “PRIVATE” CROSS-LOCALITY NETWORKS: CONDITIONS FOR ACCESS, COMPLEMENTARY ROLES AND IMPACT ON INDUSTRIAL DISTRICT COMPETITIVENESS

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Abstract

Firms located in industrial districts are acknowledged to benefit from externalities of geographic colocation, like access to specialized inputs and labour skills, better infrastructure and so on. Nevertheless, there is no clear empirical evidence that their performance is, on average, better than that of ‘isolated’ firms. I argue that a contingent approach is required to better explore the relationship between clustering and performance and suggest that access to external, more codified and ‘scientific’ knowledge, that complement informal and tacit knowledge developed within an industrial district, is of increasing importance as a source of competitiveness both for a district as a whole and for individual district firms. After illustrating main features of ‘public’ and ‘private’ cross-locality networks as possible ways to facilitate access to external knowledge for an industrial district, I propose a theoretical framework that, with the aid of some Italian cases, explores conditions of access, complementary roles and impact of cross-locality networks on performance both of an industrial district as a whole and of individual firms located in it.

Keywords: industrial district; district governance; cross-locality network; district firm.

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Introduction

A great deal of scholars of economics, strategic management, organizational theory, and sociology have focused on geographic agglomeration as a source of externalities (for example Marshall 1920; Krugman 1991; Amin and Wilkinson 1999) for co-located firms. Different kinds of advantages have been identified as a result of geographic proximity, such as knowledge creation, performance (Jaffe 1989), innovation (Audretsch and Feldman 1996; Bell 2005), patenting (Jaffe, Trajtenberg, and Henderson 1993) and competitive positioning (Porter 1990; 1998). Benefits from geographic clustering would come through knowledge spillovers, informal information exchange, and easier access to inputs, skills and other resources (Scott 1992; Harrison, Kelley, and Gant 1996; Rosenkopf, Metiu, and George 2001). Clusters and industrial districts are seen as vehicles for learning (Brown and Hendry 1998; Capello 1999; Keeble and Wilkinson 1999; Maskell and Malmberg 1999). Moreover, co-location would foster cooperative norms, trust, and shared identity, which in turn facilitate collaboration (for example Saxenian 1994).

Notwithstanding positive externalities (Ghani and Stewart 1991), empirical evidence for the relationship between clustering and firm performance is not so straightforward and theoretical arguments have been developed to explain both positive and negative impacts of the former on the latter (Boschma 2005). A number of scholars have found no empirical evidence of the superior performance of firms located in clusters or industrial districts with respect to “isolated” firms in the same industry (for example Zaheer and George 2004), while others have even found a negative correlation between spatial agglomeration and performance. A negative impact of clustering on performance can arise from stronger competition for resources, which, according to organizational ecology, is due to greater degree of similarity among the co-located companies (Staber 1998; 2001; Sorenson and Audia 2000); from adverse selection (Shaver and Flyer 2000); and from cognitive, functional or political lock-in (Grabher 1993; Visser and Boschma 2004).

In this paper, I have opted for a contingent approach (for example Rowley, Behrens, and Krackhardt 2000) and argue that firms located in industrial districts (Becattini 1990) can reach

superior performance only to the extent they have access to sources of valuable knowledge residing outside the boundaries of the district. Consistently with this view, the 90s and the first decade of the new millennium are characterized by scholarly attention to knowledge-intensive firms and to the issues of knowledge creation and transfer (for example Brown and Eisenhardt 1998; Gant 1996; Hansen 1999; Nonaka and Takeuchi 1995; Powell, Koput, and Smith-Doerr 1996; Argote and Ingram 2000; Inkpen and Tsang 2005): in fact, knowledge is considered of great and growing importance as a source of competitive advantage and therefore firms must devote greater resources to knowledge creation and exploitation. Consistently, Zaheer and George call for research that explores “in greater detail the conditions under which knowledge or complementary assets are accessed within the cluster and lead to superior performance” (2004: 450). Some authors point out that valuable knowledge that companies develop and share within industrial districts is typically informal, tacit, uncodified, and experience-based (Maskell 1998; Antonelli 1999; Belussi and Pilotti 2000), while modern competition increasingly requires firms to combine this type of know-how with a more codified, explicit and “scientific” knowledge (Becattini and Rullani 1993). Provided that the latter is generally produced by universities, research centres, and big companies, that are normally located outside geographic clusters, firms residing within them must develop external relationships to gain access to that knowledge. Innovation, which is a primary source of competitiveness, is the result of the joint effort of internal research, through R&D and engineering departments, of external absorption, and of knowledge recombination (Cohen and Levinthal 1990). Cross-locality networks (CLNs) therefore have the primary function of allowing firms located in industrial districts to gain access to external knowledge and to combine it with the context-specific, uncodified but nevertheless valuable one that developed over time within district boundaries. CLNs are also a mode of learning enabling an ID and firms within it to explore global knowledge flows (Simmie and Sennet 1999; Belussi, Pilotti, and Sedita 2006). Finally, they can be seen as a direction of evolution and development of local capitalism in the context of globalization (Brioschi, Brioschi, and Cainelli 2002; Parrilli 2004).

“Private” and “Public” Cross-Locality Networks

There is ample literature on networks that explores their different types and organizational structures, their antecedents, mechanisms of networking, governance, and their impact on the performance of

the firms involved (for an overview see, for instance, Grandori and Soda 1995).

In this paper, I focus on cross-locality networks (Johannisson 2008) that involve industrial districts (IDs) or individual firms residing there and define them as all types of relationship that connect an ID or an individual firm located in it to firms or other actors that reside outside that ID in a relatively stable manner and through different modes of inter-organizational coordination and cooperation.

Even if the structure and properties of such networks can vary along a number of dimensions, I will concentrate on their governance (for example Parto 2008) and identify two types of cross-locality networks (CLNs): public and private CLNs. It represents a relatively new categorisation of governance systems, whilst most of the literature focuses upon the relations among (un)equal partners within networks, whose imbalanced power relations create vertical governance systems and skewed outcomes and benefits for the population of firms and people (Humphrey and Schmitz 2004; Sacchetti and Sugden 2005).

They differ substantially because, while the former are promoted and governed by public authorities or an association of firms and aim to benefit all the firms belonging to the ID or those affiliated with the association respectively, the latter are promoted by an individual firm in order to appropriate of all the advantages arising from them and to exclude the other firms belonging to the same ID. Resources and competencies an ID has access to through public CLNs are socialized within the ID or the affiliated firms. And the collective organizations – public authorities or associations – that are involved in the CLN play the role of mediators.

Public CLNs can take the form of a joint venture in which a collective organization of the district participates with an external partner, like a public authority, a research centre or a firm; of a contract, like in the case of “area contracts”, defined as having the purpose of attracting external companies that bring in resources not available *in loco* to the district territory; of conventions or other formal agreements, whose ultimate aim is to mediate the relationships between ID firms and external partners, like universities or research centres, concerning for example the hiring of a certain number of young, specialized graduates. Private CLNs, in turn, may take the form of a joint venture, of a formal agreement like in the case of a contract, or of an informal agreement.

CLNs can be governed through proprietary mechanisms (like in the case of joint ventures), contractual (“area contracts”) or social mechanisms (informal agreements). Both public and private CLNs can have structures that range from a “one-to-one” model, where one ID organization gets involved in a CLN with one external partner – for

example in case of a joint venture or of a convention with an university –, to a “one-to-many” model, such as when a district firm is at the core of an international subcontracting network (De Propris, Menghinello, and Sugden 2008) with a relatively small number of external partners or when it is a member of a ‘virtual’ network. The emergence of the network economy revealed that a large number of organizations (for example internet companies, banks, telecommunication companies) create value by organizing virtual, not merely geographical, spaces for flows (Castells 1996). For instance, in the virtual network defined by a bank, customers operating in the same industry can take advantage of three main network externalities: economies of scale in the production of information, distinctive intra-firm skill development and competitive information spillover (Sasson 2005: 45-46). Therefore, a district firm, beyond being co-located in a geographic network (the ID), can be co-affiliated in a virtual network, that provides it with further benefits with respect to the ID.

A given district can be involved in different public CLNs at the same time and an individual ID firm can similarly take part in different private CLNs that cooperate for the purpose of increasing the pool of resources it has access to.

In conclusion, both public and private CLNs can be powerful tools that allow the ID as a whole or an individual firm to gain access to external knowledge – that complements knowledge developed internally – and, ultimately, to enhance competitiveness. Relationships involved in CLNs can also be seen as trans-local public goods (Bellandi and Caloffi 2008).

Main elements defining public and private CLNs are summarized in table 1.

Insert table 1 about here

A Theoretical Framework

The proposed theoretical framework is founded on the primary distinction between public and private CLNs and aims to shed light both on the conditions that facilitate or make it possible to create or participate in a CLN, and on the complementarities between public and private CLNs for the purpose of enhancing the competitiveness of both the ID and the individual firm belonging to it. Individual theoretical propositions will be explained with the aid of some cases of Italian IDs.

The set-up of a new CLN that involves external actors or participation in a pre-existing external network requires that the ID as a whole, a group of associated firms or an individual firm in an ID be attractive, in the sense that they are able to offer potential external partners resources or competencies that are valuable, rare and

complementary at the same time. In the case of IDs, such attractiveness depends primarily on the quality of the context- or firm-specific know-how that has been developed over time within the district, on the culture and the attitude toward innovation, as well as on the absorptive capacity (Cohen and Levinthal 1990) that makes it easier for a district or an individual firm located in it to effectively incorporate “imported” knowledge in new products or production processes. In some cases, a high level of attractiveness can make the internalization of sources of external knowledge possible, which means that knowledge production centres transfer their headquarters within the ID’s territory. In the case of the agro-food district of Lodi, in Italy, local authorities recently stipulated an agreement (a so called “*accordo di programma*”) with Milan’s University for the transfer from Milan to Lodi of the Faculty of Veterinary Medicine, which includes a veterinary hospital (one of the biggest of Europe), a center for training in animal husbandry, as well as classrooms and a laboratory unit, and of the Faculty of Agronomy. The formal agreement that set up the CLN was signed in 1998 by two local authorities representing the Lodi district (municipality and province), a private association of local firms (the Lodi Chambre of Commerce), a regional public authority (the “Regione Lombardia”) and the Milan University. This CLN was officially facilitated by the geographic proximity of Milan to Lodi and by the availability of large spaces that make possible a physical expansion that would otherwise not have been viable in the city of Milan. Nevertheless, one of the most relevant factors that allowed public authorities of the Lodi district to defeat the competition of many other territories not far from Milan was the excellence of context-specific know-how in agricultural and zootechnical practices: for instance, farmers in the Lodi ID have reached a leading position at European level in terms of productivity, as measured by the quantity of milk produced on average by an individual cow.

Proposition 1a: District-specific valuable resources and competencies facilitate the development or the participation of that ID in public cross-locality networks.

Also in the case of individual firms, attractiveness is a fundamental condition for gaining access to CLNs as a source of valuable external knowledge. For a firm located in an ID, attractiveness is a function of two variables: the attractiveness of the ID the focal firm belongs to, and the valuable, firm-specific resources and competencies that it was able to develop over time. From the perspective of an external partner, a firm in an ID can play the role of the mediator thus allowing it to gain access to the district’s resources and competencies, and particularly to the informal, uncoded, context-

specific but often valuable know-how that is shared within the ID boundaries. Therefore, while the district firm makes the district network and externalities available to the external partner, even if in a mediated and controlled form, the latter allows the former to use the knowledge it has developed outside the ID. But providing an access to the ID network and externalities is not a sufficient condition of attractiveness. It must develop resources and competencies that make it unique with respect to the other district firms in the eyes of external partners. Such resources and competencies can reside in a particularly original and innovative combination of the district resources, in an exclusive access to them through proprietary or hierarchical ties, in an outstanding attitude towards and culture of innovation, or in an absorptive capacity that allows it to identify very fast innovative ways of combining external knowledge and internal know-how as well as the market potential of this combination. Absorptive capacity is defined as 'the ability of a firm to acquire, assimilate, adapt, and apply new knowledge - that is, to learn (Zahra and George 2002)' (Tallmann, Jenkins, Henry, and Pinch 2004: 262). According with Cohen and Levinthal (1990), it depends on a firm's prior stock of related knowledge.

Reggiani Lanificio is a relatively small Italian firm (around € 30 mn of sales turnover), belonging to the textile district of Biella-Borgosesia, whose uniqueness in the district is based upon three key elements: the wide range of high-quality raw materials used, from wool (the typical and traditional raw material in the ID) to cashmere, alpaca, camel, cotton, linen, viscose and floating mohair, often in unusual blends; the use of Lycra Dupont that confers elasticity to all the fabrics it produces; the fully vertical integration, with internal departments for spinning, twisting, warping, weaving, dyeing, and finishing. 25 years experience in elasticized fabrics and a strong penchant for testing new production processes or improving the existing ones reinforced Reggiani uniqueness through a continual flow of incremental innovation, which resulted in final products of top quality sold to leading customers like Prada, Gil Sander, Gucci, Louis Vitton, and Hugo Boss. These elements, combined with outstanding manufacturing skills and the high-quality raw materials available in the ID, allowed Reggiani Lanificio to attract the American multinational Du Pont and to sign an agreement for the development of new products that incorporate Dupont lycra. According to this agreement, Reggiani has the exclusive use of the new yarns developed by Dupont two years before they are put on the market; Dupont, in turn, can use Reggiani Lanificio's R&D department to test and fine-tune its new products.

Proposition 1b: Valuable district-specific combined with firm-specific resources and competencies facilitate the development or the participation of the individual firm in private cross-locality networks.

Public CLNs are expected to play an important role in enhancing an ID's competitiveness at least in two different but complementary ways: on the one hand, they enlarge the pool of knowledge ID firms can draw upon, making it easier for them to access the kind of knowledge seldom produced within the ID's boundaries. On the other, the enlarged pool of knowledge as well as of relationships with external actors increases the attractiveness of the ID for further external actors who can bring further valuable knowledge. The consequence is both a widening of the competitive gap with respect to firms located outside and the potential increase in variety within the ID, provided that a wider range of resources and competencies available in the ID can potentially increase the number of possible combinations among them and therefore the number of businesses and of business segments they can operate in. According to the organizational ecology perspective, a greater variety reduces competition for resources and generally increases firm performance. Therefore, the attitude of an ID towards participating in CLNs tends to be self-reinforcing.

The transfer of the Veterinary Faculty from Milan to Lodi is not the only way the agro-food district of Lodi could have accessed external sources of valuable knowledge. In fact, the University is part of an excellence centre for the agro-food biotechnologies strongly supported in Lodi by the Regione Lombardia, that also includes CERSA (an agro-food research centre), private research laboratories, an enterprise incubator and a business park. Pre-existing district know-how and the CLN with Regione Lombardia and University of Milan made the creation of this centre of excellence possible and it has now become a "magnet" for further knowledge depositors, like professor Salamini, a former leader of the well-known Max Planck Institute (Cologne, Germany), who accepted to lead the CERSA in Lodi and attracted some of the most promising young researchers in Europe there. This centre of excellence is expected to increase the district's competitiveness both through the creation of start-ups and spin-offs, by offering know-how, incubator facilities and services, and through the dissemination of the newly developed knowledge to existing local firms (farmers, producers of food for animals, milk and cheese companies, and so on).

Proposition 2a: District-specific know-how and competencies and public CLNs are complementary in enhancing ID competitiveness.

While uniqueness can make a firm attractive for external partners and therefore facilitate its participation in private CLNs, membership in a private CLN may in turn increase that firm's competitiveness by building or reinforcing its uniqueness both within the ID and in the industry as a whole. A valuable combination of internally developed know-how and of knowledge achieved through a private CLN may be a powerful source of innovation and therefore improve a firm's performance with respect to other district firms (Eraydin and Armatli-Koroğlu 2005). In some cases, an individual firm enters or builds a private CLN instead of becoming affiliated with a public CLN, in order to privately appropriate knowledge developed within the CLN and prevent it from becoming "socialized" within the ID.

The above-mentioned case of Reggiani Lanificio is useful to explain how a district firm's competitiveness is founded upon three complementary key elements (figure 1): exploitation of district-specific resources and competencies, like textile manufacturing skills and fiber quality (box 1 in figure 1); development of firm-specific resources and competencies in product innovation, in the production of elasticized fabrics, in quality control through vertical integration, as well as in serving the most sophisticated customers (loop in box 2 in figure 1); use of external knowledge through a CLN with Dupont since the end of Nineties (loop in box 3 in figure 1).

Participation in private CLNs may also benefit a firm competitiveness in an indirect way, i.e. by making it more attractive for district-specific resources and capabilities and therefore by putting it in a better position in the competition for resources inside the ID. For instance, highly-specialized and skilled employees are likely to privilege firms whose relationships with external knowledge sources increase the opportunities to exploit, fertilize, enhance their own skills and capabilities.

Insert figure 1 about here

Proposition 2b: Private CLNs, district-specific, as well as firm - specific know-how and competencies are complementary in enhancing a district firm's competitiveness.

While an individual firm tries to create or participate in private CLNs in order to privately appropriate all the benefits stemming from them, some advantages extend beyond the boundaries of that firm. Close geographical proximity facilitates information circulation and knowledge spillovers, and no individual firm is able to completely prevent other firms from benefitting from them. I argue that

private CLNs can have an impact on the performance of a district as a whole through two main processes. First, through imitation (for example Storper 1995; Belussi 2004). Imitation is stated to be one of the most widespread mechanisms of evolution of an ID, facilitated by geographic proximity, social ties as well as a sort of free riding: in order to reduce costs and the risk of failure, small firms often adopt an innovation only when other local competitors have experienced it as successful. But in case of CLNs, imitation can be a source of variety rather than of homogeneity, and therefore have a positive effect on the district's competitiveness. In fact, involvement of an individual firm in a private CLN gives rise, through an imitation process, to an increase in the overall number of private CLNs district firms are involved in. These CLNs often do not overlap and they enlarge the total amount of valuable external resources and competencies an ID as a whole can gain access to. In other words, district firms can access a greater amount of knowledge developed outside, which, in turn, increases the number of possible resource combinations. It may result in an increased variety of business models, which, in turn, reduces pressure on resources within the ID and therefore enhances the overall performance: many firms in the ID can explore new dimensions along which to differentiate their products, new market or industry segments, or even new industries. Therefore, commitment to private CLNs can be seen as a strategic option for many district firms and that may open the doors to new business opportunities.

Second, by spreading in the ID the information, knowledge, and even the personal relationships that an individual firm has access to through a private CLN; the relatively high mobility of specialized workers, shared subcontractors, as well as social networks within the ID often disseminate in the area intangible but valuable assets previously acquired or developed privately.

Proposition 3a: Public and private CLNs are complementary in enhancing an ID's competitiveness.

Similarly, public CLNs may interact with private CLNs to enhance an individual district firm's competitiveness. The fundamental process through which public CLNs impact on individual firms is mediation between external depositors of knowledge and district firms, which makes it possible or less expensive for them to access that knowledge. Such CLNs can have different degrees of formalization: high formalization in the case of the agreement between Lodi district representatives, on the one side, and University of Milan and Regione Lombardia, on the other; low when the ID representative only facilitates, in the context of an

informal agreement, contacts and transactions between individual firms and external knowledge depositors. This was the case of Applicazioni Plastiche Industriali (API), an association in the ski boots ID of Montebelluna in Italy, that facilitated the relationships between individual local producers and Universities or big multinationals like Bayer.

It must be acknowledged that not all the firms within an ID are equally able to benefit from public CLNs. Their ability to take advantage from them is to some extent contingent upon their own resources and capabilities, in that they determine the absorptive capacity to recognize and exploit the opportunities to access external knowledge as well as the range and the value of new and original combinations of internal and external knowledge.

Public and private CLNs can also play complementary roles but at different times. Nordica is a company in the Montebelluna sport shoe district that became a leading international manufacturer of ski boots towards the end of the 80s. One of the underpinnings of its success was its ability in combining the use of the district's input suppliers and specialized subcontractors with exclusive access to critical external resources. First among these, a direct relationship – not mediated by the local association for industrial plastic applications (API) – with the German company Bayer which turned out to be precious for the development of innovative plastic materials used in the production of ski boots. Bayer had the chemical know-how, while Nordica was an important experimentation lab. By working directly with Bayer, Nordica not only gained access to exclusive know-how, but it also avoided the risk of knowledge and information spillovers towards competitors in the district, something that would have been inevitable had the relationship been mediated by API.

The shifting of an individual firm from the mediation of an ID association to the direct involvement in a private CLN is conditional upon the internal development of competencies, languages, and culture that allow it not only to become attractive in the eyes of external partners, but also to establish a dialogue with them. Size and cultural differences, as well as informational asymmetries with respect to external knowledge depositors like large firms and universities make the mediation role of collective ID organizations fundamental: by becoming involved in public CLNs they also act as incubators, providing small local firms with vital resources until they are able to gain access to them on their own.

Proposition 3b: Public and private CLNs are complementary in enhancing a district firm's competitiveness.

The overall theoretical framework is summarized in figure 2.

Insert figure 2 about here

Theoretical Implications

The theoretical framework presented above can provide some useful contributions to the advance of the theory about geographic firm clustering.

First of all, involvement in CLNs as bridges to valuable external knowledge can be a useful starting point to build a contingent theory on relationships between geographic clustering and firms' performance. Globalization processes and dramatic increases of the role of knowledge for competitive advantage make autarchy and closeness ways of decline for IDs (Guerrieri and Pietrobelli 2004; Rabellotti 2004). Therefore, externalities that are acknowledged to benefit firms co-located in IDs will actually impact on their performance provided they are fertilized and combined with resources and competencies developed elsewhere. If there is a lack of links connecting local with external and even global networks, firms located in the ID are expected, on average, to lose competitiveness and the ID as a whole to suffer from a reduction of its position within the industry. Empirical research is needed to operationalize an ID's openness and attitude toward CLNs and explore how it affects the relationship between clustering and firm performance.

Second, exploration of how CLNs interact with social and business networks within IDs (Johannisson, Alexanderson, Nowicki, and Senneseth 1994) may help to solve the dilemma between imitation and uniqueness that district firms often deal with. On one hand, from an institutional standpoint, there is strong pressure to imitate organizations that were successful in obtaining environmental resources (DiMaggio and Powell 1983; Hannan and Freeman 1977). On the other, studies on competitive advantage and strategic management point out that the relative superiority in obtaining such resources arises from the ability to create and sustain organizational uniqueness. This is what Porac, Thomas and Baden-Fuller (1989) defined as a "competitive cusp". A company that strongly resembles other companies in the ID will obviously find it easier to get the resources it needs on site, to profit from the circulation of information and, last but not least, enjoy greater legitimization (Meyer and Rowan 1977) at the local level. It is, however, not likely to obtain a sustainable competitive advantage or achieve superior performance. Moreover, similarity increases competition for resources and risks of spillovers. Instead, the "unique" company may find fewer advantages in proximity to other companies of the district, but it will also encounter less of the

typical risks arising from co-location. From a longitudinal perspective, a company in an ID can form and operate as 'one of the many' for a long time and then progressively distinguish itself. Entering private CLNs may represent a strategic option that a number of firms belonging to the same ID can imitate and adopt without increasing homogeneity, but, rather, enhancing uniqueness from an individual firm's perspective and variety for the ID as a whole. This happens because CLNs provide access to external resources and competencies that not only fertilize those developed within the ID, but also enlarge the range of possible resource combinations, each corresponding to a specific business idea (Normann 1977). Interfirm networks have been acknowledged to impact on learning and innovation at individual firm level and on firm heterogeneity in competitive capabilities (McEvily and Zaheer 1999).

A third theoretical contribution deals with the complex relationships between individual and collective dimensions as drivers of the evolution and performance of district firms and IDs as aggregates of firms. Advantages from public CLNs benefit an ID as a whole but by benefitting individual firms: collective organizations like municipalities or firm associations play the role of mediators between external partners and individual firms. As far as private CLNs are concerned, in spite of the individual firm's attempts to fully appropriate benefits coming from them, the typical properties of IDs such as modes of organizing economic activity – like shared subcontractors, worker mobility and social networks – facilitate the circulation of information and therefore lead to some dissemination of benefits beyond the individual firms. Yet, some 'public' effects of 'private' CLNs positively impact on the ID as a whole without reducing the advantages for the individual firm: involvement in a CLN can be imitated by other local firms with the effect of enlarge the total amount of resources available in the ID and of enhancing variety.

Fourth, public and private CLNs can be seen as organizational arrangements that can lead an ID and district firms respectively to increase their degree of ambidexterity (for example, Tushman and O'Reilly 1996), that is their ability to exploit and explore simultaneously. The simultaneous execution of exploration and exploitation is crucial for organizational survival and prosperity (March 1991; Tushman and O'Reilly 1996). While exploitation positively affects short-term performance, exploration is a must for organizational survival and prosperity in the long-run (Gibson and Birkinshaw 2004; March 1991). "An organization that engages exclusively in exploration will ordinarily suffer from the fact that it never gains the returns of its knowledge," while "an organization that engages exclusively in

exploitation will ordinarily suffer from obsolescence" (Levinthal and March 1993: 105). Therefore, collective organizations like public authorities or firm associations need to find ways to combine "explorative" organizational arrangements like CLNs – searching for external, unknown flows of knowledge – with more "exploitative" ones, aiming at safeguarding, innovating, handing down traditional, locally-based know-how. Becoming ambidextrous – as many organizational scholars acknowledge – is a challenge that IDs and firms within them have to deal with.

The theoretical framework proposed in this paper presents at least two limitations. First of all, it focuses only on the public-private dichotomy as different modes of governance of CLNs. More fine-grained distinctions would certainly help achieve a deeper understanding of how CLNs affect performance and drivers of the evolution of IDs and within IDs. Nevertheless, the proposed dichotomy is consistent with the fundamental structure of IDs, where collective and individual dimensions continuously interact and co-determine evolution and performance for individual firms and the ID as a whole. Second, the six propositions that make up the theoretical model have not been empirically tested, but can provide useful suggestions to scholars and researchers who wish to understand through which processes and mechanisms IDs can intercept external flows of valuable knowledge and resources and how they are distributed within an ID.

Managerial Implications

Once they have understood how dangerous a too inward-looking attitude can be for an ID, collective organizations, like public entities and firm associations, should carefully define a strategy aimed at promoting district participation in CLNs. At first glance, this can be done in mainly two ways: i) directly, through involvement in public CLNs to mediate and facilitate access to external valuable and complementary resources and competencies for district firms; ii) indirectly, by trying to build a positive attitude toward private CLNs within the ID.

The first way can be called, in short, 'bridging'. This function may consist in promoting new public CLNs or participating in already existing ones, like conventions with universities and external research centers, or agreements with external partners geared to attracting to the ID's area, companies with managerial, technological and research and development resources that local companies would otherwise not have access to. The second way is ultimately a cultural function, that in turn can be achieved in two complementary ways: by challenging and signalling. The former has specifically cultural and cognitive objectives:

through courses, conventions and debates collective organizations can challenge possible shared beliefs – concerning for example the ID's excellence in a certain field, ID autarchy or autonomy – that are out of synch with the evolution of the environment and might threaten to lock the cluster in, undermining its adaptation and innovation skills and therefore its survival (Grabher 1993). The latter consists of initiatives – like the creation of courses for the application of a new technology or even involvement in public CLNs – that signal possible new paths of development and growth to the companies and the territory.

Both direct and indirect ways of facilitating CLNs require collective organizations to achieve a thorough awareness of the strengths and weaknesses of the ID, of its valuable resources and competencies, of the risk of their obsolescence, as well as of resources and competencies the ID lacks. Knowledge management systems may prove useful for this purpose.

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Table 1. Key Elements Defining Cross-Locality Networks (CLNs).

Key Elements of CLNs	Public CLNs	Private CLNs
Type of governance	Collective (public)	Individual (private)
Mechanisms of governance	Proprietary or contractual	Proprietary, social or contractual
Type of network	Mixed (public + private ownership) joint ventures; contracts (like “area contracts”); conventions; other forms of formal agreements	Joint ventures; subcontracting networks; international franchising; ‘virtual’ networks; various kinds of formal and informal agreements
Structures	From “one-to-one” to “one-to-many” model	From “one-to-one” to “one-to-many” model
ID representatives in the CLN	Collective organizations like public authorities (for example municipalities) or firm associations (trade associations, consortia, etc.)	Individual firms
Typical external partners	Public authorities; research centres; universities; associations	Firms; research centres; universities; associations
Direct beneficiaries in the ID	Potentially, all the firms located in the ID or those affiliated to the association	Individual companies
Benefit distribution mechanisms and rules	At two levels: 1) between ID representatives and external partners; 2) between partners within the ID	At a single level: between ID firm and external partners

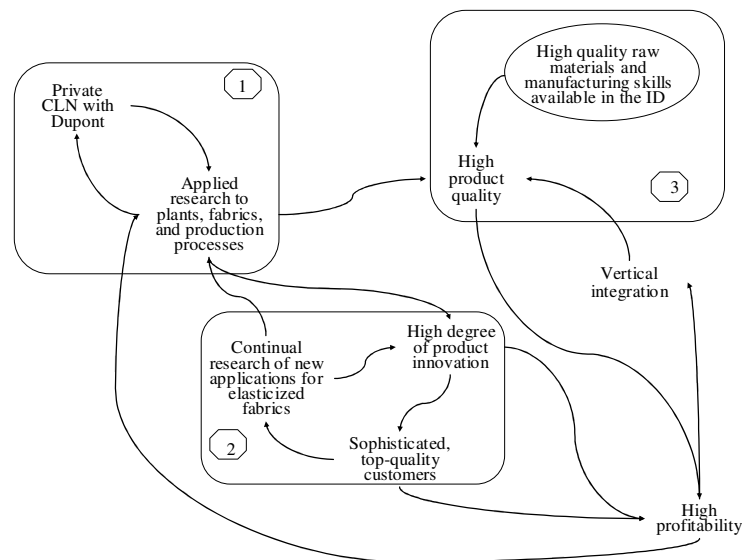


Figure 1. Private CLN as Co-Determinants of Firm Performance: the Case of Reggiani Lanificio

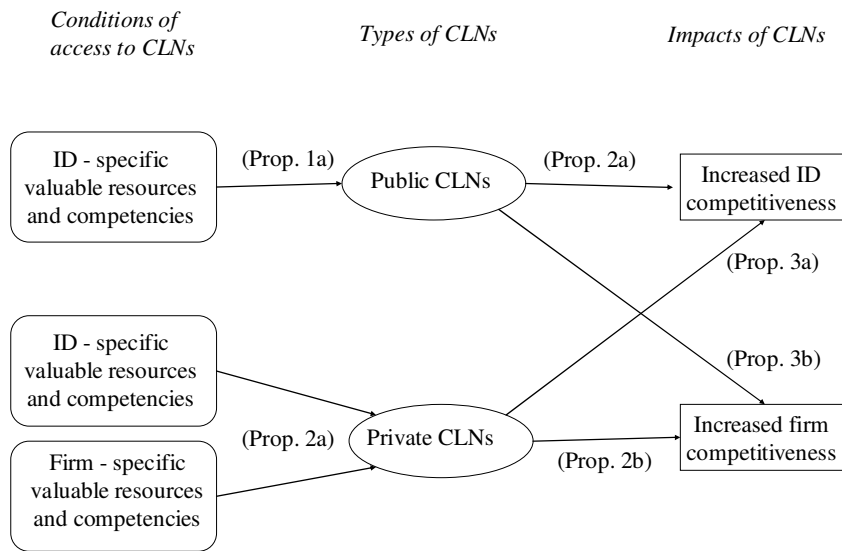


Figure 2. The Overall Theoretical Model