

This article was downloaded by: [Chiarvesio, Maria]

On: 5 February 2010

Access details: Access Details: [subscription number 919007368]

Publisher Routledge

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European Planning Studies

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713417253>

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Online publication date: 01 February 2010

To cite this Article Chiarvesio, Maria, Di Maria, Eleonora and Micelli, Stefano(2010) 'Global Value Chains and Open Networks: The Case of Italian Industrial Districts', *European Planning Studies*, 18: 3, 333 – 350

To link to this Article: DOI: 10.1080/09654310903497637

URL: <http://dx.doi.org/10.1080/09654310903497637>

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Global Value Chains and Open Networks: The Case of Italian Industrial Districts

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(Received July 2007; accepted December 2008)

ABSTRACT *Italian district small and medium enterprises (SMEs) developed aggressive strategies to extend their sales networks and supply chains abroad. Literature on districts offered alternative explanations about the impacts of internationalization on local manufacturing systems. The authors consider the evolution of Italian districts in the framework of global value chain approach, focusing on the role of leading firms. Based on a survey of 650 Italian SMEs and financial indicators, the paper describes the rise of a new district firm model, the open network, which becomes a key node of global value chains. The paper also analyses the relationships among internationalization, innovation strategies and performance of SMEs.*

1. Introduction

The Italian industrial districts are changing. Globalization is causing a profound transformation of some traditional characteristics that have helped districts to gain international success and fame over the past decades. Competitive pressure from emerging countries and the business opportunities provided by new technologies started an important evolutionary process, which has not yet come to an end. To use Charles Sabel's words: "Districts are on the move" (Sabel, 2004).

Industrial districts historically represented an important alternative to Fordist production model and a model to ignite development in developing countries (Piore & Sabel, 1984; Sabel & Zeitlin, 1985; Andersson *et al.*, 2004; Porter, 1998). The specialized clusters of firms bounded in specific territories proved their competitiveness by contributing to Italian exports to a significant degree in the last 20 years. A specific point of interest about the district

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model at the international level was the link with local culture: industrial growth and economic performances have been spurred by local traditions and cultural habits, which are at the heart of the classic Marshallian “atmosphere” (Becattini, 1979, 1991).

Since the beginning of this decade the economic performance of Italian industrial districts has experienced a significant downturn. The declining share of Italian international trade (a 1.5 Billion Euro deficit in the trade balance between 2003 and 2004, the first negative results after 12 positive years) and the increasing difficulties encountered by the so-called made in Italy products in European and US markets lead to an important debate in both the scientific community and among policy makers (Ice-Reprint, 2003). International analysts pointed out major difficulties of industrial districts in terms of innovation and commercial capacity. Critics of clusters deny the miraculous effect of districts, due to the lack of important competitive drivers such as their reduced capacity to create breakthrough innovation, to manage formalized knowledge (i.e. patents, etc.), and to control markets on a stable basis (Fortis, 2005).

The current transition of Italian industrial districts has been analysed by the economic literature from two different, alternative perspectives. On the one hand, the established contributions outlining the district model have stressed the importance of a coherent and systemic evolution of the whole local manufacturing system and the social fabric in which it is enmeshed (Becattini, 1991). According to this approach, local manufacturing systems should evolve by preserving their internal social and economic coherence. The renovation of their sources of competitiveness has to be found within the district manufacturing tradition—i.e. local skills in textile—in the culture and competencies embedded in the territories. Transformation should be along the path of continuity sort by previous experience and the district competitive model.

On the other hand, an alternative approach highlights the relevance of discontinuity as a key driver to develop new sources of value for districts and their territories. More precisely, scholars have pointed out the role of leading firms as a crucial determinant in renovating local manufacturing systems on the basis of deliberate business strategies (i.e. Corò & Grandinetti, 1999). In contrast to the previous viewpoint, this perspective focuses on firms, mostly leading firms at a territorial level, with less emphasis on the district as a system. The role of firms and their conduct facing globalization’s challenges appear to be critical variables in shaping the new features of industrial districts. Clusters’ external linkages and firms’ interconnections to global value chains are elements that will play a critical role in analysing the economy of local territories (Markusen, 1996; Bair & Gereffi, 2001).

This paper aims at assessing these changes by adopting this second perspective. After a comparison of the two alternative research perspectives mentioned above, the paper presents the results of a large-scale survey that analyses the link between economic performance and the business strategy of leading firms in 41 industrial districts in Italy. The results of the analysis show the relevance of an emerging model of the firm in Italy’s industrial districts that represents a key interface between local production systems and global economy and plays the role of active node of broader global value chains at a territorial level. The authors name this emerging model of firms an “open network”. The paper considers the most important differences between “open networks” and the more traditional model of firms at a district level. The paper also elaborates on the implications of this new model of firms in terms of the evolution of professional competencies at a territorial level and the need for innovative business services.

2. Theoretical Background: How Districts Change

2.1. A New Approach to Industrial Districts: From System Dynamics to Firm Strategies

According to Becattini's (1979) pioneering studies on industrial districts, the competitiveness of local manufacturing systems is rooted in the strong links that connect economic and social processes at a territorial level. Elaborating on Marshall's definitions, Becattini (1991) and the Florentine school have stressed the social dimension of economic activities as the basis for the districts' competitiveness. The emphasis on the embeddedness of industry specialization into local contexts and the relevance attributed to the interdependence between economic activities and social ties (the *genius loci*) has been the trademark of a rich and dense line of research (Pyke *et al.*, 1990; Morosini, 2004; Storper, 1993).

In this perspective, the district supply chain is self-contained within the district boundaries; external transactions occur with suppliers of raw materials and with the final markets. Spatial proximity plays a critical role in the district dynamics, reducing firms' transaction costs in terms of control, information sharing and coordination. Industrial districts were able to develop profitable innovative processes, strictly related to their industry specialization and their distinctiveness (Lorenzoni & Lipparini, 1999). By different degrees of opening their core processes, firms share manufacturing activities (components, part manufactures, etc.) with partners in a collaborative environment, which stimulate reciprocal learning and product improvements. Industrial districts are not only networks of firms, but also complex social systems. A mix of market and community (Dei Ottati, 1994) governs industrial districts, where purely self-interested behaviour is almost always substituted by the aim of general community benefits.

The recent heavy economic crisis has stimulated an internal reorganization through mergers and acquisitions, especially oriented to leveraging high quality internal competencies in order to exploit international opportunities. From a theoretical perspective, research contributions emphasize these trends and the role of discontinuity as a driver of local competitiveness, where knowledge and competence inputs from outside the territories can positively impact on local dynamics and their evolution (Florida, 2002; Chesbrough, 2003).

One of the elements that characterize the evolution of industrial districts regards the role of single firms operating within the system. The systemic focus on the district has generally prevailed upon the study of the strategic behaviour of district firms. However, the internal dynamics of the district and its evolutionary resources are not independent from the district players and have to take into account the variety of district firms (Varaldo & Ferrucci, 1996). According to the traditional approach of the district as a socio-economic entity, firms are put to one side. But, as stressed by Varaldo and Ferrucci (1996), a more explicit attention to the firm as the unit of analysis can help researchers to verify how the efficiency and effectiveness of the district are tightly linked with peculiarities of the district firm model. Moreover, the district external economies are valuable ones only if they become sources for district firms' competitive advantage. The evolutionary trends of districts starting from the 1990s highlighted the rise of single firms as leading players capable of catalysing local transformation based on innovation.

This role of dynamic firms in opening the local district systems towards the global economy was identified during the last decade of the past century (Becattini & Rullani, 1996; Lazerson & Lorenzoni, 1999). These firms are characterized by an autonomous strategy, capable of developing strategic decisions with a strong impact at the local level. These strategies diverge from the traditional district firm model both in terms of operations

and organizational structures. Firms are interested in finding efficiency abroad, but they are also driven by strategies of innovation-seeking, where the global circuit of knowledge may open new opportunities for product innovation and market interaction.

Unlike the majority of district firms, leading firms are able to invest consistently with an eye towards the global dimension, by exploiting the opportunity created by the discontinuity with prior trends in the district. Such a process includes the delocalization of subcontracting, the selection of foreign specialized suppliers and the supply of qualified services (such as information technology (IT) implementation, quality certification, market research and financial services) outside the district. Generally speaking, in the management of resources, leading firms are oriented to evaluate local (and global) resources and providers according to higher quality standards (Kogut, 1985; Savona & Schiattarella, 2004).

The globalization processes require considering the district model in a new perspective, where leading firms can play a substantial role (Zeitlin, 2007). Especially mature clusters, such as the Italian ones, are asked to renovate their sources of competitive advantage in order to face a global organization of economic activities, with potential alternative paths of evolution at the local level.

2.2. Industrial Districts and Global Value Chains

The literature on global value chains describes the relevant reorganization of the division of labour within specific sectors on a global dimension (e.g. Humphrey & Schmitz, 2002; Gereffi *et al.*, 2005). Specifically, those contributions emphasize the role of a few firms—buyer-driven or supplier-driven value chains—in setting the governance and coordinating the inter-firm networks on a wide scale. The management of business-to-business relationships can rely on alternative mechanisms, where pure hierarchy or pure market approaches are just two extremes of a continuum.

According to those studies, the development and the upgrading of global value chains may positively impact on the growth of local manufacturing firms and systems (Schmitz & Knorrina, 2000; Humphrey & Schmitz, 2002) in terms of employment, market development, and innovation processes. The upgrading of local systems driven or enhanced by leading firms within global value chains helps to transform the economic landscape of territories worldwide, as those forms of organization reinforce local specialization already existing as well as offer new opportunities for underdeveloped countries. As other studies on internationalization point out (Doz *et al.*, 2001), innovative leaders may promote dynamic value chains based on context “sensing” and exploitation of local competencies, systematically embodied in global networks. With respect to the studies on industrial districts, focused on the local dimension as the *locus* where competitiveness is developed and business activities are carried out, the literature on global value chains has considered territories from the opposite perspective—i.e. Humphrey and Schmitz, 2002—from global to local. In this framework, local clusters are relevant whenever they are able to contribute to the competitiveness of the global value chains.

Analysts and scholars have analysed the strategic options of leading firms in order to interpret the evolutionary trends of Italian districts (Crouch *et al.*, 2001). Facing such globalization processes, the leading firms within districts are adopting two different strategies. First, some firms invested in niche strategies, namely in those districts characterized by high qualified competencies and a worldwide reputation. This choice appears to be sustainable in a limited number of cases. Some Italian industrial districts are oriented towards excellence:

the furniture of Brianza, the apparel system of Naples, the luxury shoes of Riviera del Brenta operate in market niches and rely on excellence to compete. International competition is less intense and the strategic issue is that of maintaining the internal excellence, on the one hand, and to open to global markets, on the other hand.

Second, many leading firms in industrial districts have decided to renovate their business strategy by upgrading their products and by investing in new brands and sales channels. These are not easy paths. They require break-through innovative capacity, not necessarily diffused among district firms (Grandinetti & Rullani, 1994; Cooke *et al.*, 2004), or specific investments (i.e. design, brand communication, information and communication technologies (ICT)), which the district firm usually cannot control completely (Corbellini & Saviolo, 2004; Bettiol & Micelli, 2005). Traditionally, learning-by-doing processes usually characterize knowledge creation and management processes within districts, with a strong link with manufacturing activities. Hence, enlarging the scale of productive processes also impacts on the way knowledge (about market, products, materials, techniques, etc.) is acquired and shared. From our perspective, there are many opportunities for linking local value chains to global ones, related to a new form of knowledge management organization where leading firms can be active players.

Enriching the picture given by Humphrey and Schmitz (2002) and by other scholars who studied the relationship between industrial districts and global value chains (e.g. Rabellotti, 1998; Bair & Gereffi, 2001), districts can upgrade their specializations in several ways: through innovative strategies carried out by firms, by entering into global sourcing and by commercial networks. Through the activity of individual firms, the local system can open its structure and firms can become nodes of more extended value chains.

Empirical research highlights how industrial districts are becoming nodes of global networks, where one can find knowledge and competencies not available at the territorial level and promote synergies with local assets (e.g. Belussi *et al.*, 2003). Leading firms are the first key players, through their activities of market control, selective outsourcing outside the district and the acquisition of strategic knowledge available globally (i.e. patents). A few of those firms are now transnational, even though they are not large as US corporations (Bartlett & Ghosal, 1989; Berger, 2005). Not only firms specializing consumer goods, but also local suppliers that have developed specialized competencies, are able to offer their products to global markets. In the last years, these opportunities for intermediate goods trade have grown specifically, thanks to the internationalization processes of district firms as well as the development of new markets, such as China (Arndt & Kierzkowsky, 2001; Corò & Volpe, 2004).

In parallel with the internationalization and control over marketing channels, leading firms have started (as first-movers) the internationalization of manufacturing processes. First, the focus was on selecting cheaper suppliers abroad, but then these firms also developed supplier evaluation processes and adopted criteria for supplier selection on the basis of quality and services offered (continuous innovation in line with international standards). This approach leads to a process of supply chain qualification, even at the local level, with positive (or negative, in case of exclusion) impacts on district suppliers (Corò & Grandinetti, 1999).

Leading firms also operate internationally through a competitive demand for services not available at the local level: marketing, design and technological innovation (Chiarvesio *et al.*, 2004). Those activities have not received attention from traditional district firms, underestimating their positive impacts on competitiveness. Often, the local

territory is not able to develop and offer qualified services in those domains. Consequently, leading firms apply outside the district for such services, but they also maintain the local sourcing for those services in which there is an excellence at the territorial level.

These global strategies of lead firms may reduce the internal cohesion of the district and increase the threat of a dis-aggregation of the local system due to the vertical integration of relationships and their formalization (processes of mergers and acquisitions among district firms, medium firms leading groups of district firms) (Crouch *et al.*, 2001; Sabel, 2004). However, the rise of leading firms does not necessarily have a negative impact on industrial districts, but they can also offer new opportunities for followers to innovate and transform their business formulas and enhance district business relationships. The crucial point now becomes to analyse the strategies of lead firms in Italy's contemporary industrial districts.

3. The Rise of Open Network

3.1 *The TeDIS Survey Methodology*

In order to describe the Italian district model and its evolutionary trends facing innovation and internationalization, in 1999 the TeDIS centre¹ launched an annual survey within a well-established research programme of district analysis.

The survey methodology is based on quantitative research supported by qualitative in-depth analysis of a large sample of firms in Italy's most important industrial districts. More specifically, the survey on internationalization was carried out through phone interviews with supply managers of small and medium enterprises (SMEs). The survey presented here was carried out during 2004, and focused on 45 relevant industrial districts in Italy, out of a total of 199 districts (for about 224,000 firms and 2,170,000 employees, altogether) identified by the Italian National Institute of Statistics. The survey addressed the four main macro-industries of the Italian economy, considered in terms of their contribution to Italian exports: (a) home furnishings (furniture, glass, ceramics); (b) engineering; (c) fashion (textiles, eyewear, shoes and sportswear) and (d) food.

Consistent with our research aim, we decided to analyse only bigger firms within districts, with a more structured organization and a higher potential capacity to carry out internationalization processes. In the selection of the sample, micro-firms with a turnover lower than 2.5 millions Euros were excluded.² We interviewed 764 companies out of 1760 (a response rate of 43.4%). To test our research hypotheses and to obtain a more reliable interpretation of data collected through the survey, we conducted face-to-face interviews with supply managers and entrepreneurs of district firms aimed at understanding the dynamics and rationale for internationalization strategies. Moreover, within the same research project, a macro-economic analysis was conducted in order to comprehend the impacts of these processes on local territories (Corò & Volpe, 2004). The results obtained through the survey were compared with the evidence from this latter analysis.

During 2005, in cooperation with the Research Center of Banca Intesa Sanpaolo, we carried out an in-depth analysis aiming at evaluating the economic and financial performance of district firms, based on certified balance sheets and according to the innovative strategies of district firms. The research was based on the same TeDIS panel, excluding firms specializing in the food sector and selecting only firms with balance sheet records available in the 2000–2003 period. We selected 648 firms, with a statistical distribution

Table 1. The TeDIS panel: distribution of clusters and firms

Industrial districts	a.v.	%	Firms	a.v.	%
North East	17	41.5	North East	280	43.2
North West	9	22.0	North West	178	27.5
Centre	6	14.6	Centre	150	23.1
South	9	22.0	South	40	6.2
Total	41	100.0	Total	648	100.0
Home-furnishing	11	26.8	Home-furnishing	166	25.6
Engineering	9	22.0	Engineering	185	28.5
Fashion	21	51.2	Fashion	297	45.8
Total	41	100.0	Total	648	100.0

Source: TeDIS, 2004.

Note: a.v., absolute value.

similar to the 764 of the initial panel. The empirical evidence discussed in the paper refers to 648 firms as described in Table 1.

3.2. The Italian District Trends on Internationalization

The firms considered are quite small both in terms of average turnover (16.5 million euro, median 9 million euro) and of employment (average number of employees is 73.1, median 46); they can be considered representative of the typical industrial district SME. The survey confirms that growth strategies are often achieved by creating formal and informal groups within the districts: 36.9% of the firms belong to groups (in 40% of the cases at the head of the group there is the same company we interviewed; in 30% of the cases, another company from the industrial district controls the group). The main activities of 49.5% of the firms are related to offering products for the final market. Table 2 summarizes the main characteristics of the sample.

SME strategies are changing the internal structures of clusters as local productive systems. More specifically, a twofold process characterizes the present cluster scenario:

- (1) Commercial internationalization: local firms are not only able to sell abroad directly (export), but they are investing to create their own sales networks in the global markets. Through these strategies they promote a more stable presence abroad.
- (2) Manufacturing internationalization: productive processes traditionally managed at the local level (local suppliers) are now carried out also by suppliers located in other countries. However, opposite to large corporations, district SMEs do not only directly invest abroad (Foreign direct investment (FDI)), but they are also interested in promoting or exploiting local networks of suppliers in the foreign countries.

Even if they are quite small, firms are able to sell abroad successfully. The average rate of export is 45.1% of the total firm's turnover (40.9% of companies export more than 50% of total turnover). From our sample, 23.5% of the firms consider themselves as leading companies within their competitive arena, while about 51% of them perceive to have a strong or relevant position in their market compared with the competitors (local and international ones).

Table 2. Main characteristics of the sample firms

Main activity	
Finished products for final market	49.5%
Finished products for other companies	33.3%
Parts and components and other manufacturing activities	17.2%
% Average turnover 2003 (in million euro)	16.5
Median turnover 2003 (in million euro)	9.0
Average employees 2003	73.1
Median employees 2003	46.0
Average export (on turnover)	45.1%
Competitive position	
Leader	23.5%
Relevant position	50.8%
Member of group	36.9%

Source: TeDIS, 2004.

Firms interviewed are export-oriented, but their capacity to control international markets is interesting too. Nearly 40% of the companies have sales infrastructures and/or partnerships to control foreign markets in terms of commercial partnerships, franchising networks or direct points of sales. The commercial internationalization of district firms is clearly developing, where the export is no more the only way of increasing global market shares. District firms invest directly in sales networks, which should be able to sustain their market strategies on a more stable and direct basis.

The internationalization processes of Italian industrial districts also affect the internal organization of supply chains. Nearly one-third (30.7%) of the companies interviewed produce their output through an international value chain. This result shows that districts are no more the main sources for manufacturing competencies and labour forces, while other countries become interesting areas where to find strategic suppliers and subcontractors.³ The TeDIS results highlight a new geography of sourcing, in which district firms select suppliers abroad, specifically in Western European countries. The aim is to acquire new knowledge and skills in order to improve their manufacturing processes and products, as well as to gain from low-cost benefits; in this case, they usually invest in FDIs or outsource activities to subcontractors in Eastern Europe, Far East (Table 3).

In short, the scenario depicted by data shows that districts are opening their borders through an extension of their commercial network as well as their supply chains at the national and international level.

3.3 *The Rise of Open Networks*

Through a cluster analysis focused on selected variables, we identified different strategic behaviours of firms concerning internationalization—i.e. different organizational models of SME value chains that vary in the attention given to local and global factors. The two drivers of analysis were as follows:

Table 3. Internationalization of industrial districts, SMEs and localization of foreign relations (% on valid answers)

<i>Companies with international production</i>	30.7%		
Strategic suppliers ^a	63.3%		
Subcontractors ^a	17.1%		
FDI ^a	38.2%		
<i>Localization of strategic suppliers</i>		<i>Localization of subcontractors</i>	
European Union (15 countries)	62.9%	European Union	18.2%
Far East	16.9%	Far East	30.3%
East Europe	18.5%	East Europe	66.7%
USA/Canada	10.5%	USA/Canada	6.1%
South America	8.1%	South America	6.1%
Japan	2.4%	Japan	0.0%
North Africa	0.8%	North Africa	6.1%
Other countries	14.5%	Other countries	0.0%
<i>Localization of FDI</i>			
European Union (15 countries)	31.1%		
Far East	18.9%		
East Europe	45.9%		
USA/Canada	13.5%		
South America	14.9%		
Japan	2.7%		
North Africa	2.7%		
Other countries	5.4%		

^aPercentage is calculated on the number of firms that have internationalized at least part of their production process (30.7% of the sample).

Source: TeDIS, 2004.

- the degree of a firm's control over foreign markets in terms of commercial power (export vs. direct sales networks abroad);
- the geography of sourcing, that is the relevance of sourcing and/or the presence of FDI outside the district.⁴

Based on the cluster analysis, four main models of firms emerged from the analysis: (1) traditional local firm; (2) traditional local firm with commercial outlets abroad; (3) firm with upstream suppliers; (4) open networks (Figure 1).

The traditional industrial district firm is characterized by a production process focused on the local context (or at least in Italy) as well as low reliance on foreign markets. They represent 48.4% of the firms interviewed. A second important district firm model refers to the traditional local firms with overseas commercial outlets abroad. They are firms with a higher degree of reliance on foreign markets and represent nearly 28% of the firms interviewed. On the manufacturing side, 11.3% of firms use upstream suppliers located outside Italy. That is, they reorganize their supply chain—through foreign suppliers and/or FDI—internationally. They are not the majority within districts. This result stresses the ongoing process of international reorganization of local manufacturing activities that still characterize districts.

Within our sample, 12.4% of the firms are open networks. The model of open network represents the most complete model of internationalization, as it is able to integrate a

Geography of sourcing	Global	Firm with upstream suppliers 11.3%	Open network 12.4%
	Local	Traditional local firm 48.4%	Local firm with commercial outlets 11.3%
		Export oriented	Direct investments
<i>Presence on international markets</i>			

Figure 1. Four models of firms in industrial districts.
Source: TeDIS, 2004.

strong and direct control on final markets worldwide with a remarkable international extension of the supply chain and manufacturing activities. They are leading firms that have been able to extend their value chain beyond the district borders and manage global networks in a completely different way with respect to the traditional model of industrial district firm, organized mainly on a local base.

Even if open networks are about 12% of the firms interviewed, they are much more significant in terms of district turnover. Open networks represent 33.3% of the total turnover of the district firms considered, while traditional local firms contribute to the district turnover for 31.4% (firms with upstream suppliers abroad are of 14.1% and firms opened downstream 21.2%). This result is calculated as the sum of the turnovers of the firms interviewed. Although this is a rough and underestimated measure of the district turnover, nevertheless it allows us to have a first insight of the nature and role of open networks within the Italian district scenario.

Open networks transform their supply chain towards a more dynamic and less locally rooted path. Within open networks, 12.5% of these firms carried out a total outsource of their activities, while partial outsourcing characterize 81.3% of open networks (11.7% and 80.1%, respectively, for the whole sample). Nearly 84% of them rely on strategic suppliers and about 67% on subcontracting (57.4% and 67.6%, respectively, is the average frequency of the sample). Italian districts are no more the primarily sources of strategic competences, as 46.1% of strategic suppliers are located abroad (22.0% the average percentage of the sample). Local networks of suppliers (subcontractors) are still important (56%) as they can guarantee flexibility and speed in manufacturing processes. Moreover, 57.5% of open networks also developed FDI (vs. 11.8% on average).

According to our data, 58.7% of open networks developed international supply chains in addition to local ones, while 10.9% replace internal activities with foreign ones (both in terms of sourcing and/or FDI). Only 30.4% of open networks replace local suppliers with foreign supply chains. Those results are particularly important to understand the impacts of open networks on district dynamics. In fact, through foreign investments, those firms extend and reinforce the local value chain internationally, by coupling local

Table 4. Open networks and traditional firms (% of valid answers)

Figure	Open network (%)	Average sample (%)	Traditional firm (%)
Firms with investments in proprietary brands	55.7	42.5	37.0
Firms with investments in product innovation	83.8	75.5	65.7
Firms with resources dedicated to design	51.3	37.4	30.4
Firms with resources dedicated to R&D	82.5	57.2	46.8
Firms with patents	45.0	29.7	19.9
Firms with ERP	51.3	36.4	27.9

Source: TeDIS, 2004.

competencies with skills and knowledge available in the global economy. Internationalization could not be perceived as a negative process. Rather, it highlights the opportunities the global markets and global sourcing offer even to district firms. The district as local manufacturing system is not competitive *per se*, but the selection of local suppliers and subcontractors—as well as firm's direct investments within the district—is evaluated on a strategic and dynamic basis, according to firm's strategy.

Open networks consider themselves as leading firms (32.9%) compared with traditional local firms (20.8%). In a scenario characterized by markets becoming larger and global, even district firms operating in niche have to update their strategy and innovate to face competition and win the market dynamics. Those results also show that traditional firms are not able to clearly evaluate their competitive position, compared with other firm models more opened to the global scenario and competitiveness (also with a larger size and more structured organization as discussed later). In general, as shown in Table 4, open network firms appear to be more open to innovation if compared with traditional firms; the difference between the two firm models is stronger if we consider a broad definition of innovation, that comprehends R&D, but also marketing innovation (brand strategy and design) as well as organizational innovation based on ICT.

3.4 Internationalization and Performance

In addition to the analysis of internationalization processes and district firms, aim of our research focus was to understand the link between the present district firm transformation processes and the firm's financial and economic performances.

Based on the data set described above, we identified and used two indicators of performance:

- the rate of a firm's *growth*, considered in terms of cumulative growth of the firm's turnover in 4-year period selected (2000–2003);
- the rate of a firm's *profitability*, calculated in terms of the average in the four years of the gross operative margin/turnover.

The complete analysis of the data clearly shows the difficulties district firms faced in the past years: considering the turnover dynamics, no growth was observed (median: 0.04%), while in the fashion industry it decreased of about seven points (−7.5%).

The most positive dynamics were observed in the mechanics industry (+5.2%); the home-furniture industry increased its turnover of 2.9% (median). If we look at the profit trends, the gross margins reduced in all the sectors, starting from 8.3% in 2000 to 6.9% in 2003 (median).

Despite this negative “average” scenario that one can observe from a general overview, a large variety of situations among sectors as well as firms arise. Few of them registered very negative trends, while other gained and grew rapidly.

According to such alternative paths, we developed an in-depth analysis to focus on the real dynamics going on within districts in terms of firm’s success and failures. Hence, we grouped firms into four clusters depending on the performance obtained⁵:

- (1) “Winners”—firms with the capacity to increase their turnover and profit over the three years considered much more than the industry average (28.1% of the firms interviewed);
- (2) “Runners”—firms able to increase their turnover with respect to other firms, however with negative consequences on their profits (lower than the industry sector average: 22.1%);
- (3) “Cautious firms”—firms aiming at maintaining their operative profitability higher than those of other firms, but reducing their growth (22.1%);
- (4) “Loser”—firms not able to develop both their turnover and operative profitability better than the industry performance (27.4%).

A first interesting element to focus on is the correlation between performance and firm size (based on turnover). In Table 5, one can observe that firms differ in terms of performance and their dimension over time. In 2000, all the selected firms started from the same size situation, specifically with an alignment of the median values of turnover. However, after 4 years, the scenario of district firms’ performances changes radically. During the period considered, characterized by strong turbulent market trends and an increasing competition, the district system is not able by itself to ensure positive performances. On the contrary, firms localized within the same industrial district may differ on turnover growth and profitability consistently from one another. The internal strong homogeneity that has been considered one of the main elements of the district model is now reducing. Firms, through their individual strategies, may obtain success or failure on the national and international markets. In this context, the embeddedness into the district has to be reconsidered on a broad and different competitive framework.

To study the connections between such performance results and the firm strategies, we selected a set of qualitative variable grouped to created specific indicators representing

Table 5. Median value of firm’s size based on turnover (million euro)—2000 and 2003

	Median turnover 2000	Median turnover 2003	Δ Turnover (2003–2000)
Winner	9.401	11.153	1.752
Runner	9.042	10.947	1.905
Cautious	9.021	7.302	–1.719
Loser	9.477	6.610	–2.867
Average	9.279	8.871	–408

Source: TeDIS, Banca Intesa, 2005.

the innovative strategies of firms considered. Specifically, the five indicators developed are as follows:

- (1) *Technology innovation*, which summarizes the presence of R&D structures within the firms, registered patents and research-based collaborations existing (i.e. with universities);
- (2) *Design and product innovation*, which consider investments in product development and innovation as well as the existence of organizational offices focused on design;
- (3) *ICT adoption*, which summarizes the adoption and use of network technologies, such as enterprise resource planning (ERP), email, website, groupware, intranet, extranet for suppliers, extranet for the sales network, supply chain management, sales force automation and customer relationship management. This indicator can identify the firm's capacity to innovate in technology as well as a proxy of the organizational complexity and formalization;
- (4) *Commercial internationalization*, based on the export rate on firm turnover and the existence of proprietary sales networks abroad;
- (5) *Manufacturing internationalization*, which summarizes the variety of forms that each firm adopts to going global (foreign supply chains, FDI, subcontractors).

The variables that influence the most firms' performances are the first three, while the relationship with internationalization seems to be more complex. More specifically, competitiveness does not depend on one of the three elements, but from a *mix* of them, coherent with economic dynamics of different industries.

There is a positive correlation between these three indicators and the performance of district firms. The more firms invest in technology innovation, ICT and design, the higher the performance obtained, compared with industry trends. On the contrary, it is relevant to consider the weak correlation between internationalization and firm's performance. From this point of view, it is important to note that open networks—that is, the firms the more inserted in the global value chains—do not necessarily obtain the best performance results.

Table 6 is built by considering only best and worst firms in terms of innovative variables selected—respectively, the 75th and the 25th percentile of the distribution of each variable. For each of the subsets (the best and the worst), we calculated the (positive or negative) gap of the performance indicators (growth of the cumulative turnover over 3 years and the average gross operative margin/turnover) from the median of the sample. Firms with high values in the indicators related to innovation (ICT, technological innovation as well as design) show better performances with respect to the industry average value. On the contrary, firms with low investments in innovation domains had worse performance margins and lost market shares. In the case of ICT indicator, the gap between the median growth of turnover 2000–2003 of the best firms and the median of the sample is +5.9; the gap for the worst is –5.5. When considering technological innovation, the gaps are +6.0 (best firms) and –3.8 (worst). In the case of design, the gaps are +4.2 and –3.5 for the best and the worst firms, respectively.

According to this perspective, despite those firms being localized in the same contexts and rooted their activities within the district systems, in the middle run—the 4 years considered—we can observe a large spectrum of competitive situations and district firms' performances. This scenario supports the idea of a process of ongoing differentiation within districts, where firms may be more relevant (and independent from) than

Table 6. Strategies and performance of district firms

		Median growth of turnover 2000–2003 (a)	Median average gross margin/ turnover 2000–2003 (b)	Gap median growth of turnover 2000–2003 (c) = (a)–0.04%	Gap median average gross margin/turnover 2000–2003 (d) = (b)–7.4%
Technological innovation	Best	5.9%	8.2%	5.9	0.8
	Worst	–5.5%	6.4%	–5.5	–1.0
ICT infrastructure	Best	6.0%	8.1%	6.0	0.7
	Worst	–3.8%	6.6%	–3.8	–0.8
Design and product innovation	Best	4.2%	8.0%	4.2	0.6
	Worst	–3.5%	6.7%	–3.5	–0.7
Manufacturing internationalization	Best	0.6%	7.2%	0.6	–0.2
	Worst	–0.4%	7.6%	–0.4	0.2
Commercial internationalization	Best	5.6%	7.2%	5.6	–0.2
	Worst	–1.9%	7.4%	–1.9	0.0

Source: TeDIS, Banca Intesa, 2005.

Notes: The median growth of turnover of the sample is 0.04% (ST); the median average gross margin/turnover of the sample is 7.4% (SGM); (c) is calculated as (a)–(ST); (d) is calculated as (b)–(SGM).

the whole system, and the increasing role of leading firms could impact on the future of the district model positively or negatively.

This scenario becomes much more difficult to describe and analyse when considering internationalization trends. Manufacturing internationalization, coupled with the commercial extensions abroad, is not sufficient to guarantee firms' results above the average rate. Instead, those positive results refer to a mix of internationalization and innovative investments.

Table 7 shows the distribution of firm models based on internationalization as well as on clusters of firm performance: 33.8% open networks has actually obtained higher performances, but one quarter of them are losers or in a difficult situation. A relevant percentage of firms with commercial outlets abroad seem to suffer from turbulent market dynamics (31.7% of them are loser firms). Considering traditional firms, one quarter of them are losers, but another 27.9% was able to gain profitability and growth. Even if, on the one hand, we can consider open networks as leading firms on a general basis, on the other hand, however, not all open networks are winners. Despite this

Table 7. Internationalization and performance of district firms

Model of firm	Winner (%)	Runner (%)	Cautious (%)	Loser (%)
Traditional local firm	27.9	17.9	25.3	28.8
Traditional local firm with commercial outlets	28.3	25.6	14.4	31.7
Firm with upstream suppliers	23.3	34.2	24.7	17.8
Open network	33.8	17.5	25.0	23.8
Average	28.2	21.9	22.2	27.8

Source: TeDIS, Banca Intesa, 2005.

framework, the data highlight that investing in the same directions allow traditional firms to obtain positive performance as well.

The internationalization strategy has been proposed as a winning option for firms in order to support their competitiveness through market enlargement and cost reductions. Instead, from our analysis, in order to obtain higher performance, such a strategy has to be coupled with explicit investments in innovation.

Those results support the idea of a deep transformation within districts, where firms with their strategies may develop alternative paths of innovation and heterogeneous competitive behaviour. Firms rooted in the same contexts are not influenced in the same way by the “local atmosphere”, while leading firms can diverge even more significantly from the average district model. From this perspective, being located within a district is not necessarily a guarantee for competitiveness. Rather, it has to be renovated and innovated over time, by exploiting internationalization processes mixed with innovation on multiple levels.

4. Lessons from Italian District SMEs

We are currently witnessing a profound transformation in the structure of Italian industrial districts. Leading firms are enlarging the boundaries of their supply base and increasingly investing in proprietary and semi-proprietary commercial networks at an international level in order to sustain their competitive strategy. Data analysed in this paper demonstrate that internationalization is not necessarily synonymous with good performance: to be competitive, so-called open networks need to couple an international presence with a mix of innovation efforts in terms of product, processes and technologies. The paper shows that firms that gain in terms of profits and growth are those that are capable of a coherent investment in R&D and codified knowledge, in the design and aesthetic components of products, and in innovative ICT solutions.

The “open network” model has new characteristics with respect to the traditional district firm. Successful open network firms developed in-house managerial competencies, not only in the manufacturing domain. Their business strategies are no longer emergent processes, but mostly the deliberate output of managerial choices. This new model does not only rely on the local territory to obtain inputs and resources for innovation and flexibility. This specific trait of “open networks” represents a clear challenge for local territories: their attractiveness, in the long term, will have to be renewed. Moreover, district firms may not be able to exploit the external economies that traditionally sustain the competitive advantages of district SMEs in recent decades. District institutions were able to lead and solve local conflicts as well as traditional governance issues of the local systems by leveraging on their comprehension of the district as a whole. Nowadays, the autonomy and independence of those leading firms open up new issues of governance at the district level, by transforming the internal coherence of the district as known in the past.

Open networks activate processes of discontinuity by connecting with a new generation of services and professionals that did not necessarily contribute to the district success in the past. Designers, IT consultancy firms and specialists, scientists and research centres are now becoming the natural counterpart of these leading firms. The key elements of strength of local territories have to be reinvented in a relatively short period of time. A quick upgrade has to take place so as to guarantee the development of this new generation of firms within districts and to reduce potential conflicts among winners and losers.

Sustaining leading firms may represent an important opportunity for local territories. Districts have to enlarge their knowledge access at a global level: instead of protecting their manufacturing heritage by default, districts should take the challenge and upgrade local competencies, services and governance models as well. Otherwise, districts will not be able to benefit from the opportunities the global economy is offering. This focus on the firm perspective does not underestimate the role of the territory in the global competition. The local system maintains its importance as a place where knowledge and competencies aimed at supporting value-added activities are produced. However, differently to the past, such role of the territory should not be taken for granted but should be the result of a more conscious institutional project to sustain innovation and related external economies (Bellandi, 2006). Industrial innovation policies should couple specific actions for firms and interventions aiming at reinforcing the institutional and operational context of the district in which those firms are located. A new generation of service centres, investments in logistics as operational framework for global value chains, new investments in broadband infrastructure to foster network technologies and new models of international co-operation could produce new collective knowledge and sustain both the renovation of territories and firms' strategies.

Acknowledgement

The authors wish to thank Gary Gereffi and Jonathan Zeitlin for their helpful comments. The shortcomings of the paper are our responsibility alone.

Notes

1. TeDIS is the Center for Studies on Technologies in Distributed Intelligence Systems of Venice International University. For more information please visit <http://www.univiu.org/research/tedis/research/tedissurvey/>
2. The 2002 balance sheet was the last one available.
3. Based on the Kraljic's (1983) contribution, we defined as "strategic" a supplier that has a partnership with the firm and that is relevant for the competitive advantage of the company we interviewed (value creation). We defined as "subcontractor" a supplier that works on behalf of other companies. This form of supply chain management characterizes the Italian organization of district business-to-business relationships, where small suppliers work on raw materials and/or components provided by their customers.
4. More specifically, we used two sets of variables in order to assess the commercial and the productive presence abroad. The first one is represented by a variable measuring firm's direct investments in commercial infrastructures (located in Italy, abroad and neither in Italy nor abroad). We do not consider a firm's export ratio, as it does not discriminate between clusters. The international organization of production is measured through three variables: the percentage of strategic suppliers (of the total number for each company) abroad; the percentage of subcontractors (of the total number for each company) abroad; the presence of FDI. The SPSS two-step cluster procedure of analysis was used.
5. Data used to build clusters are from the industry median value (cumulative growth of the turnover and the gross operative margin/turnover), to avoid distort effects of the trend dynamics specific of firm industry specialization.

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