Organizing the 'productive transformation of knowledge'. Linking university and industry in traditional manufacturing areas

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The article aims at underlining the key role played by extra-academic and autonomous organizations strongly connected with university institutions and researchers in producing, acquiring, transferring and transforming knowledge. The study examines a particular Italian case, the "Politecnico Calzaturiero", a consortium company operating in North-eastern Italy. The analysis of this experience suggests that organizations playing a key role in enacting the 'productive transformation of knowledge', can be neither universities nor firms. 'Special organizations' like the one this article analyses are deeply embedded in their economic and institutional environment, are closely interconnected within a dense and extended network of various actors, engage in complex and time-consuming processes, and can be understood as organizational *relé*, that is entities, which are able to connect structures that are usually not connected. For these reasons, they represent an underestimated resource for universities' third mission and its management.

Keywords: university's third mission; productive transformation of knowledge; technology transfer; university-industry relationships; industrial districts

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From 'technology transfer' to the 'productive transformation of knowledge'

The productive transformation of knowledge approach

Universities engage with society in a wide variety of complex ways, influenced by their historical mandate and role, tradition, culture, and geographical location. This engagement, also known as 'university's third mission' is 'relational' (Nedeva, 2008), connecting universities with different partners, public bodies, private sector and civil society (Slowey, 2003) both in the economic sphere and in the broader societal extra-economic sphere (Boffo & Moscati, 2012; Pinheiro, Benneworth & Jones, 2012; Benneworth, Zomer & Benneworth, 2011; Charles & Madanipour, 2010; Laredo, 2007; Gulbrandsen & Slipersaeter, 2007; Schoen *et al.*, 2006).

This article focuses on the economic dimension, which has been the major focus for scholars and policy makers in recent times.

This dimension is already commonly established in the sense that it has been much researched and discussed, especially in the 1980s and 1990s, focusing on the contribution of universities to industrial innovation in terms of knowledge (or, mostly, 'technology') transfer (OECD 2013; Varga, ed. 2009; Shattock, ed. 2009; Markman *et al.* 2008; 2005; Etzkowitz *et al.*, 2000; Lee, 1996; 1998). University-industry 'technology transfer' tends to be considered as the passing on of previously developed research results from university laboratories to industry. However, looking at the many empirical studies carried out over last decades (Kline & Rosenberg, 1986; Gibbons *et al.*, 1994; Muller & Zenker, 2001; Mowery & Sampat, 2005), this view seems to be overly simplistic and unrealistic. Bucchi and Bonaccorsi criticize the 'technology transfer' approach and conclude that the expression 'technology transfer' itself should be abolished and replaced with the notion of 'productive transformation of knowledge' (Bucchi & Bonaccorsi, 2011, pp. 257-259).

According to the two authors, the 'productive transformation of knowledge', henceforth PTK, is different from 'technology transfer' on account of some main characteristics (Bucchi & Bonaccorsi, 2011, pp. 259-260).

Indeed, it is necessary to consider that the PTK:

- is a time-consuming activity (frequently highly consuming);
- is a process that requires the active involvement of knowledge-holders;

- must engage people in three dimensions: the cognitive one (individual intentions and values), the emotional one (intimate satisfactions and personal gratifications), and the behavioural one (system of incentives);
- requires the permanent or, more often, temporary mobility of people;
- is characterised by risk and uncertainty because the consequences, outcomes and paths of the transformation process are impossible to predict;
- is itself an entrepreneurial process;
- takes place within institutional contexts which are not always able to support the process by providing legitimation, motivations and incentives.

The proposal of a perspective based on the notion of the PTK is related to the growing body of research on knowledge within organizations. Here the transforming process (Carlile 2004; Carlile & Rebentisch, 2003) has been analysed from the perspective of managing different actors and specialized domains in settings where innovation is desired. Such an approach offers the possibility to better understand the effort required to adequately share and assess domain-specific 'knowledge boundaries' (Brown, Duguid, 2001; Carlile, 2004; Rosenkranz, Vranešić & Holten, 2014). More particularly, according to Carlile's view, the 'transforming knowledge' process occurs at a 'pragmatic boundary', that is where actors with different interests meet. Under these circumstances, domain-specific knowledge, as well as the common knowledge used, may need to be transformed. Shared artefacts and methods, as well as objects (drawings, prototypes…), play an important role in providing the capacity to negotiate interests, represent different functional goals and transform knowledge (Carlile, 2004, p. 259).

The 'communities of practice' literature (Brown & Duguid, 1991; Lave & Wenger, 1991; Wenger, 1998) also emphasizes the importance of similar activities and particular settings in order to develop shared meanings between different actors.

This article tries to integrate these approaches with the studies on the 'third mission' and the role of universities in economic development. It argues that extra-academic and autonomous organizations with strong formal and informal ties with university institutions and researchers play a key role in the PTK.

As a consequence, much more attention must be paid to such 'special organizations', in order better to understand the PTK processes within a complex set of institutional relationships. These actors are neither academic institutions nor firms.

Since such bodies are located midway along the transformation chain, one could assume that they are the 'organizers' of the whole process. In this case the concept of 'organizing' is used in Weick's terms (1977), i.e. principally as an activity of 'enactment' and 'sense-making'.

Enacting organizations

The PTK process described above depends upon the nature of knowledge. A preliminary basic distinction must be drawn between knowledge and information. The first to advance this distinction was the French economist Jean Louis Maunoury (1972).

Knowledge empowers its possessors with the capacity for intellectual or physical action. So the concept of knowledge is primarily a matter of cognitive capability. Conversely, information takes the shape of structured and formatted data that stay passive and inert until knowledge-holders interpret and process them (David & Foray, 2002; Foray, 2000).

From this fundamental distinction derives that knowledge: 1) is a combination of 'tacit' and 'explicit' dimensions (Polanyi, 1966); 2) is often invested within a given practice, so that '*Wissen*' and '*Können*', 'knowing that' and 'knowing how' (Ryle, 1949, Chapter II) are strictly connected one another; 3) is 'situated' (Lave & Wenger, 1991) and 'sticky' (von Hippel, 1994), or, rather, costly to move from particular social and cultural contexts where the information was produced to other sites.

This short analysis suggests three main considerations. Firstly, the PTK takes advantage of the various (physical and non-physical) dimensions of proximity: geographical, cognitive, organizational, social, cultural and institutional (see: Boshma, 2005; Noteboom, 2004; Lane & Maxfield, 1997). Indeed such forms of proximity can facilitate the interaction and the exchange between both individual and collective actors. Secondly, the PTK is a multi-actor and multi-dimensional process, which stretches over time. So, it is difficult to understand just by analysing, for example, university-industry relations in a given area and time. It is necessary to extend our observation across a more complex institutional and organizational field, looking at other actors and organizations that may be relevant in enacting and operating the process. Thirdly, the PTK is not just about transferring something from producers to users. It is a creating and generating process, in which actors learn, exchange and observe each other doing

things. Therefore, someone has to implement the proper setting, involve the actors, provide instruments and set out the objectives. The special organization enacting the process can be neither a university nor a firm.

In Italy it is possible to recognize several examples of such special organizations that can be traced to two categories. The first one includes extra-academic research-centred organizations, dedicated to applied specific-sector research, i.e. managing organizations of sciences parks such as *Kilometro Rosso* in Bergamo or *Tecnogranda* in Cuneo, high technology research centres as the *Istituto Mario Boella* in Torino, laboratories for innovation serving small and medium-sized enterprises as *Centrocot* in Busto Arsizio. The second category is represented by highly specialized teaching-centred organizations, training skilled workers in the high-qualified artisan manufacturing sectors, as it is the case of the world's leading international educational and training centre for Italian Cuisine *ALMA* in Parma.

The next section will illustrate a case that is considered emblematic in this respect for three reasons. Firstly, the *Politecnico Calzaturiero* in the Brenta area (in the North-East of Italy) operates in the footwear industry, that is a traditional sector, considered of low-technology intensity. Secondly, the organization match research and teaching activities, using its structure and devices both for training skilled workers and for providing consulting, applied research and innovation services to firms. Thirdly, the *Politecnico Calzaturiero* is fairly well embedded in the social, institutional, economic and local cultural environment. The desire for innovation comes mainly from SME associations, regional authorities and local banks. In order to promote and pursue innovation, these actors set up the consortium that owns the *Politecnico Calzaturiero*.

The *Politecnico Calzaturiero*: A case study

The analysis of the case aims to explore how this kind of organization can be considered as a key-actor in the PTK. The inquiry will test the PTK approach by means of an empirical analysis on the different dimensions of the process (actors, time, settings).

Thus, the description will provide a short account of its history and context, its organizational and institutional structure, its inter-organizational relations, and its activities.

To develop the case study, authors collected information gathering and analysing documents, and carrying out a site visit and some in-depth interviews with managers of the organization in June 2014 within the frame of a wider research project on the relationships between universities, innovation and regional economies.

History and context

The *Politecnico Calzaturiero* is a consortium company specialized in training, consulting and applied research for the footwear industry. It is localized within the industrial district of the Brenta area, which has a long tradition in the shoes manufacturing.

'Riviera del Brenta' is one of the most important Italian footwear industrial districts. By the term industrial district we refer to the Marshallian concept and particularly to its Italian variant (see Pyke, Becattini & Sengenberger, 1990; Becattini, Bellandi & De Propris, 2009). The origins of the local footwear industry date back to the establishment of the first mechanized shoe factory in 1898. It was in that year that the pioneer Giovanni Luigi Voltan, after having spent some time in the United States learning the trade, returned to his small village (Strà) with some machines for making shoes in order to set up his own business.

By 1904, the *Calzaturificio Voltan* employed 400 people, and was producing 1,000 pair of shoes per day (Fontana *et al.*, 2009, pp. 14-15). At the beginning of the 1900s, many workers from Voltan's enterprise began to set up their own independent business in Strà and other nearby villages. This marked the beginning of the shoe district known as 'Riviera del Brenta', named after the river, which flows through the area.

The *Politecnico Calzaturiero* has strong ties with the historical roots of the industrial district. The first artisan school in the area was founded in 1923. According to historical evidence, the new educational institution profited from public-private cooperation dynamics since its establishment. Giovanni Luigi Voltan's son, Fortunato, sponsored the project with his own resources while local associations municipalities added further resources.

During the boom in the footwear industry after World War II, educational activities started up again in 1946 after they had been stopped during the war. In a few years, the number of students considerably increased, so much so, that it was necessary to equip new classrooms. In 1953, 252 students were attending the vocational courses (Fontana, 2008).

In 1961, the Footwear Manufacturers Association of the Riviera del Brenta (ACRIB) was set up. The association brought and still brings together entrepreneurs of the footwear industry in the entire area, across the provinces of Padua and Venice. In 1968, the footwear district employed 13,000 people. In the area there were a total of 300 footwear companies, including both artisan and industrial firms.

Since the second half of the 1980s, the area has suffered from increasing competition on international markets and sales have stagnated. Meanwhile, the sales abroad of Brenta's local economy increased from about 70 per cent at the beginning of the 1980s to 88 per cent in 2000, which represented more than 10 per cent of total Italian exports in the sector (Rabellotti, 2001). Increasingly local firms started to convert their business, aiming to integrate into the global value-chain (Gereffi, 1994). Many of Brenta's shoe producers began to work either partially or exclusively as subcontractors for high fashion global companies.

Local institutions and entrepreneurial associations have supported this necessary strategic shift over recent decades. In particular, ACRIB, established the export consortium (*Consorzio Maestri Calzaturieri del Brenta*) in 1967 and the technological and training institute, called *Consorzio Centro Veneto Calzaturiero*, which was set up in 1986. This consortium took over the artisan school and continued to manage it up to 2001 when it set up the *Politecnico Calzaturiero*, together with employers' associations, local and regional authorities, and local banks.

The next paragraph will analyse the governance, organization and activities of this new institution acting in the district of Brenta.

The development of this institution can be seen as a sign of dynamism and reacting capacity characterizing the district. Currently, the 538 footwear companies in the area (Table 1) still represent 69.9 per cent of the footwear industry in Veneto and 9.6 per cent of the Italian footwear sector.

The 10,141 employees in the district represent 61.8 per cent of the regional workforce in the sector and 13.9 per cent of the entire footwear sector in Italy (ACRIB, 2013). The district exports about 91 per cent of its production. The value of exports in 2013 augmented from 717.1 million euros to 755.4 (Intesa Sanpaolo, 2014, p. 7), an increase of 38.3 per cent in a year, which has not been particularly satisfying for the national economy as a whole.

Table 1. Number of firms and employees in Brenta's industrial district 1981-2013

Year	Number of firms	Number of employees
1981	523	10181
1991	832	9419
2001	993	14260
2011	568	10516
2013	538	10141

Source: authors' elaboration of data from: ACRIB (2013); Rabellotti (2001).

Structure and organizational field

The *Politecnico Calzaturiero* is based in Capriccio di Vigonza, near Padua, in a former shoe factory, which has been fully converted to its new use.

Members of the company board are almost all entrepreneurs or managers in the footwear business sector.

The company building contains eight classrooms for teaching and practical exercises, two IT laboratories with 32 workstations equipped with Internet connections, software for office automation and 2D and 3D CAD-CAM design.

There are also some laboratories with specialized equipment which are used for teaching, research and to offer services to firms, such as:

- quality control of materials and footwear products;
- design and project with a 3D printer to produce prototypes;
- cutting and edging;
- assembling prototypes and reproducing the whole shoe manufacturing cycle on a small scale.

The *Politecnico* has 5 permanent employees. Approximately 100 more contractors work for the institution as teachers, trainers and laboratory technicians.

The training centre carries out three main sets of activities:

- training and education;
- consulting and services to companies;
- research and innovation projects.

The first area includes the Technical School for Modellers and Shoemakers, which was attended by nearly 190 students last year. Furthermore, the company organizes postgraduate and higher technical education courses. Last year 64 students took part in the tertiary vocational course "COSMO", which the *Politecnico Calzaturiero* has been promoting in cooperation with upper secondary schools, industry associations, local authorities and the University of Padova since 2011. Moreover, 15 students are following the Higher Education Course in shoe design in partnership with the Politecnico University of Milan (Allulli, 2012, p. 2). Finally, the organization is involved in continuing education with training courses for people who are either employed, unemployed and at risk of unemployment. Over all, nearly 1,500 people have been engaged in these activities during the last year (Interview 1).

The second set of activities and services directly addresses manufacturing companies operating in the shoe industry. This consulting business ranges from the quality control of materials and shoe components by means of laboratory tests to rapid prototyping using design software programs along with experiments and research on new materials, environmental analysis and other consulting services on safety in factories and workplaces.

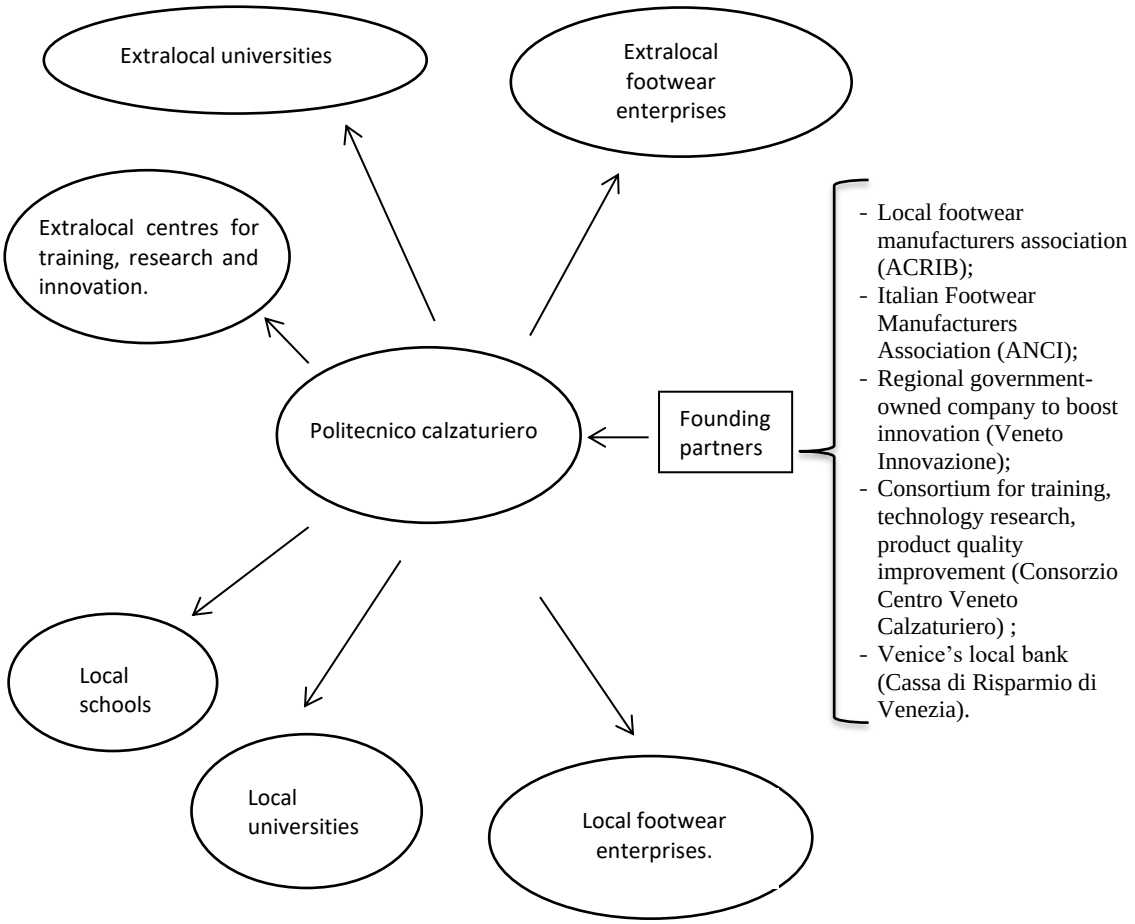
Research projects for new training methods, as well as for product and process innovation in the footwear industry form the third group of activities. Normally these projects are carried out in cooperation with universities, firms, and other similar national and international centres for training, research and innovation.

According to the European Centre for the Development of Vocational Training (CEDEFOP) and OECD surveys (Allulli, 2012; Destefanis, 2012), the main strength of the *Politecnico Calzaturiero* is the analysis of the needs of the enterprise and the subsequent choice of teaching topics and the design of training and educational plans.

A technical committee periodically carries out an analysis of training needs, taking into consideration the footwear market, the features of the local territory served by the institution and new emerging professions. The analysis is based on market research and field studies concerning the footwear industry or similar sectors. Based on the results, the members of the technical committee, who are all employers, define the guidelines of the sector's training needs (Interview 2). Afterwards, they set up sub-committees consisting of employers and teachers to draw up detailed professional profiles and develop specific training projects. In this way, the teachers establish course standards (knowledge, skills and competences to be achieved) together with the representatives of the local companies.

The integration of training activities with the other activities of the institution is an important element to understand the needs of the enterprises and provide continuous technical updating and refresher courses. In fact, the *Politecnico Calzaturiero* regularly collaborates with more than 200 firms, half of which are located in the district while the remaining operates outside (Interview 1). Moreover, the *Politecnico Calzaturiero* manages a vast and complex system of relationships, not only with district firms and external firms, but also with technology suppliers and similar institutions operating in other countries, universities and research centres (Figure 1). On this basis, it carries out the function of local-global interface or gatekeeper (Bathelt, Malmberg & Maskell 2004; Camuffo & Grandinetti 2011). The regular acquisition of specific knowledge is then used to provide a continuous improvement of teaching and learning, even when the feedback from these activities is not explicit.

Figure 1. Local and external relations of the Politecnico calzaturiero of Riviera del Brenta



Source: authors' elaboration.

Main activities and objectives

In order to shed light on the activities and relationships of the *Politecnico*, this paragraph will go more into detail by analysing a couple of projects recently carried out by the institution.

The first project is 'IDEA-foot'. The *Politecnico* managed this project together with the National Research Council and the Centre for Studies and Aerospace Activities (CISAS) of the University of Padua.

The project was undertaken within the European Union's Seventh Framework Programme for Research (FP7). It aimed at creating 'innovative design and manufacturing systems for small-scale footwear companies.

The reference scenario for the IDEA-foot project consists of SMEs working in the footwear industry, particularly those operating in the market segment of classical and casual shoes. To face global competition, SMEs must combine the need to reduce the time to market with product diversification and high quality, as well as the handcraft contents of the product. In other words the project has developed an automated production line for high quality, small batch and variegated productions. This is a way to combine the advantages of both craft and standardized methods of production creating benefits for SMEs. Once again we can see that the *Politecnico* has acted as a bridge between technicians and producers, representing the typical knowledge needs of small and medium enterprises to the former. By interacting with local, national and international universities and research centres, the *Politecnico* has been able to develop new knowledge and practices and it has been able to easily transfer these to local producers through routine training courses and consulting services.

The second initiative to focus on is the pilot project 'Au-delà de la salle', aimed at analysing what happens 'in the backroom'. This research project was carried out with the financial support of the European Leonardo program. Among the partners of the project we have the Instituto Tecnologico de Calzado y Conexas (INESCOP), a Spanish innovation and service centre for the footwear sector and the University of Brasov (Romania). The aim of the project was to facilitate a partial codification and dissemination of the tacit knowledge in footwear production processes by observing and analysing, together with the trainees, the behaviour of a senior worker during the shoe assembling-process. This exercise led to:

- the identification of a logical path that helps learners to perform the various stages of the process fully aware of the scope of the steps undertaken along the way; in this way trainees were able to identify difficulties, and to acquire complex practical skills;
- the definition of a logical taxonomy for assessing the level of awareness and mastery of the trainee regarding the logical process of assembling;

- the definition of a very detailed framework for describing the job, defining and assessing workers' skills and the competences needed for assembling shoes.

Looking at the objectives and the partnership of this project, it is clear that it deals with an important issue for small and medium sized enterprises: the inter-generational transfer of 'know how' and skills, which are difficult to reproduce. The project tried to face this challenge by combining practical knowledge and theoretical tools of analysis.

Managers of the *Politecnico* consider the participation of universities and research centres to these projects and other activities carried out by the institution as strategic: 'we usually know very well our aims, but we need appropriate specialized knowledge and competences to develop our action, so we look at those university departments or researchers studying such problems' (Interview 1).

A project like 'Au-delà de la salle' facilitates the interaction between different actors: employers, students, researchers, and public institutions. As a consequence, the *Politecnico* helps local firms to apply complex and specialized knowledge and to combine it with practical knowledge. Furthermore, the outcomes of this kind of research program and the tools prepared within it influence the subsequent teaching and learning activities.

Conclusions

Findings

Considering the case study analysed, it is possible to point out the following conclusions. Firstly, in local contexts like the one analysed here, autonomous extra-academic organizations strongly embedded in the institutional and socio-economic environment play a key role in the process of PTK. In these contexts it is impossible to study the contribution of university's to industrial innovation without looking at such 'special organizations' located midway along the knowledge transformation chain. Secondly, the PTK approach leads to understanding the diffusion and productive application of knowledge in a multi-dimensional and multi-actor perspective. Individual actors, as well as collective ones, have different interests and objectives, different resources, different cognitive approaches and specializations. The PTK involves

different and complex activities: observation, sharing practices, methods and techniques, using and jointly transforming artefacts, drawings, prototypes and other kinds of objects, negotiating time, spaces and resources. Thirdly, the PTK requires not only the involvement of individual knowledge holders, but also the creation of adequate settings of interaction. Territory-based linkages can facilitate the process and provide the conditions for both individual and inter-organizational cooperation. However, proximity as well as the desire for innovation are just preconditions. In order to get results, someone has to enact and implement the process.

The case study describes the role of a special organization in the PTK within a specific sector and a local context providing an example of how inter-organizational relationships, tasks and resources are managed.

The PTK is a process that is too complex and costly to be implemented by a single individual. It requires an organization with an adequate amount of resources, instruments, and legitimation.

In the case analysed, the main source of local legitimation for the organization is a strong connection with the entrepreneurial association.

On the other hand, the organization is a relevant actor able to connect local and endogenous factors of development to the international and global dimensions. Indeed, the company we have studied is closely intertwined in a dense network of various actors, most of which are universities, firms or others centres for training, research and innovation at a national and international level.

The case study shows how an autonomous and extra-academic organization such as the *Politecnico Calzaturiero* can be an important driver of PTK, involving academic actors and institutions. As we can clearly see, observing the ordinary activities of the *Politecnico* or special projects like 'Au-delà de la salle', this organization is well equipped to implement the development of practices of knowledge sharing. In other words, through training, consulting and applied research activities, the *Politecnico* builds up localized and physical settings where different actors (students, employees, entrepreneurs, researchers, managers, teachers) interact across domain-specific 'knowledge boundaries' (Brown & Duguid 2001; Carlile, 2004; Rosenkranz, Vranešić & Holten 2014).

From the organization theory perspective, this kind of social actor can be conceived as an organizational *relé* (Crozier & Friedberg, 1977, pp. 141-142), that is, an entity able to connect structures that normally are not connected.

Relations 'at the boundaries' recall the relations of 'nonredundancy' in network analysis which are 'visible only by their absence' (Burt, 1992, p. 4). According to Burt's definition, 'a structural hole is a relationship of nonredundancy between two contacts' (*ibidem*, 18). From a strictly sociological point of view, this approach leads us to consider knowledge boundaries as structural holes between different 'expert systems', in the sense that Giddens (1990, pp. 27-29) gives to this expression.

Looking at the characteristics of the cluster where the *Politecnico calzaturiero* is located, it is possible to point out some possible reasons why an organizational *relé* between firms and research institutions is needed. Firstly, the small and medium sized enterprises of the district lack the organizational resources and skills to address their demand and requests of knowledge, directly to universities and research institutions. Secondly, the Italian higher education does not include teaching and research activities closely related to the shoe-manufacturing sector. The education system of the country assigns the task of vocational training in this field to non-academic schools. As a consequence universities often miss direct experience and relationship with the relevant stakeholders.

In more traditional productive contexts, special organizations connecting universities and economic operators are required because the cognitive, institutional and cultural distance among different social actors is too large. As the case study clearly highlights, the specific trait of an organizational *relé* like the *Politecnico calzaturiero* consists in the ability to transform and negotiate different aims and objectives between firms and university departments.

"Special organizations" implement settings where different actors can learn, create and exchange new knowledge, observing each other doing things. For this reason they represent underestimated resources for universities' third mission.

Adequate interaction settings are very difficult to create and reproduce, because knowledge is sticky and requires time to appropriate. Thus, these 'special organizations' are generally embedded in places, even if they indeed establish relationships with companies, universities, research centres on a national and international scale.

Implications for further research and policymaking

Considering the technology transfer approach as too simplistic and unrealistic to study how academic institutions can contribute to industrial innovation and economic growth, has led to a deeper investigation of the complex way in which actors can generate, circulate, and transform knowledge.

The PTK framework has the advantage that it deals with complex and time-consuming processes within an institutional context.

This work has tried to understand which actors enact the process and how they manage tasks and resources in such multi-actor and multi-dimensional activities applying this framework to a specific case using an organizational point of view. By analysing the 'organizational field' level (Di Maggio & Powell, 1983) it is possible to understand how different organizations engage in the process.

The main suggestion resulting from this contribution is that the organization playing a key role in enacting the process can be neither a university nor a firm. To study the problem by looking at the role of such 'special organizations' could be a promising way to address further research. University-industry relationships are indeed a core issue for innovation and economic growth. Such relationships, however, have to be seen in a more complex institutional and organizational context, where other actors can play a role, which is sometimes a crucial one.

This point can be relevant to the strategic action of universities and to their management. Universities may strengthen their involvement with autonomous organizations in order to bridge the cognitive, institutional and cultural distance hindering cooperation with business actors.

At the policymaking level, the possibility to identify such organizational *relé* could be a potentially fruitful ground to invest in. These *relé* assume different institutional and organizational forms, but substantially they perform a similar function that is very significant in strategic policies aiming at fostering innovation, education, and research.

Thus, one possible line for further investigation, may aim at understanding which institutions support them, where they tend to locate, and which their main objectives are. Collecting information on these issues could be the first important step in order to set up effective future policies to support or encourage innovation.

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