

THE ROLE OF INNOVATION POLICIES IN URBAN DEVELOPMENT PROJECTS:

THE “*ETNA VALLEY*” OF CATANIA(*)

1. The spread of innovation in the globalisation era: the role of cities

It is widely recognised that innovation represents a key factor for strategic competitiveness among enterprises. For this reason, the realisation of centres which are able to spread innovation and to transfer technology from the research area to the production sector is now considered a fundamental tool within regional development policies. The focus of the innovation process has shifted from the single enterprise to the territorial systems thus encouraging not only the generation of new products and processes but also the creation of new and more efficient firms (Conti, 1989; Camagni, Malfi, 1986). From this point of view, innovation is based even more on the local context than on the firms’ peculiarities. For this reason, the general economic and social conditions, together with an easy access to information, represent key factors in the territorial perspective.

Geographical proximity can enhance co-operation in research among enterprises, as well as a direct access to international networks could stimulate the adoption of innovation without the traditional role of mediation played by the some research institutes. New technologies have enable large-sized enterprises’ research units to dialogue with other research laboratories without the previous obstacles due to long distances. On the other hand, SMEs, particularly the ones which are located in the regions of less developed countries, still maintain their dependence on geographical proximity even if they adopt high technologies. Particularly, for these activities to be spread it is necessary to provide a general context that can enhance the realisation of technological processes. In this contest, high-specialised labour, together with an efficient relationships network between researchers and entrepreneurs, both represent key factors in the realisation of high-tech productions.

The difficulty of the SMEs to express the need of new technologies, often satisfied from interested supplying of machinery, and, in the same time, the difficulty to converse effectively with technologists of other regions in order to pick the technological opportunities already available, means giving an indispensable role in the technological transfer to some specific areas.

Moreover, competitiveness develops not only among enterprises but especially within those locations where production, services and research interests can be expressed through the valorisation of local resources. It is widely recognised that the socio-cultural and economical characteristics of a geographical area have a strong impact both on the research activities and on the production processes (Becattini and Rullani, 1993). This is true especially when the generation of cognitive and learning processes originate the immaterial transformation of the production (Rullani, 1992). In the so-called “post-industrial society”, for instance, the traditional distance between manufacturing and service sector

becomes shorter thanks to new technologies that facilitate relationships and enable firms to meet consumers' needs (Di Bernardo, 1991; Rullani, 2000).

In this contest, cities play more and more the central role of “incubators” for innovation processes (Camagni and Salone, 1998/1999). The urban area represents the ideal meeting place where information exchange can occur thus creating the bases for the development of innovation. The urban communication system aims at connecting the different components of the socio-economical and institutional environment by creating the ideal conditions to enhance stronger and long-term relationships (Rullani, 2000). Even though new communication technologies have widely changed the nature of relationships by connecting people and organisations quickly and at lower cost, the role of cities still remains strong. City is considered as a common space where both formal and informal interactions can easily spread.

On the other hand, the innovation process originated within the city, by taking into account the increasingly high social complexity, could make it possible to obtain a direct control on strategic areas within the international competitive framework (Rullani, 2000). Some historical cases within the Italian contest have not confirmed such trend and some of the most important cities, such as Turin, Genoa and Naples have lost much of their power over the last few years (Dematteis, 1998/99).

Another important example is represented by Palermo, seat of Sicilian government, that owing to the dramatic crisis of the 90's, has lost its leadership giving an advantage to other urban areas. Catania is the most significant example of how the capability of reacting to the threats of the economical environment can represent a vital opportunity for ones growth. As a matter of fact, over the last few years Catania has been characterised by a process through which its traditional production activities, such as building and trade sectors, have been substituted by higher innovative activities (such as electronics, informatic and telecommunication) (Ruggiero and Scrofani, 2001).

A deep transformation has interested the Catania economic system, through an increasingly high number of innovative local and national-international companies, attracted from a added value that city grants. The hi-tech activities developed in Catania, in the manufacture field as well as in advanced services and research sectors, has justify the introduction of the “Etna Valley” as a new expression to indicate the area in which those new companies have settled.

Considering that have been delineated factors, actors and resources of development of the highly innovative sectors of Etna Valley, drafting present and future processes which involve the organisation of urban activities, by means of interviews to the responsables of the main hi-tech companies operating in Catania and to key actors of the local Institutions (Municipality and University).

2. High Technology in Catania: the urban *milieu* and networks

Over the last decade the importance of services sector has highly increased within the urban economy thus compensating the cutting of agricultural incomes and the static nature of the industrial

earnings (Istituto Tagliacarne, 2001). National data have registered an increasingly strong presence of high-tech sectors compared to the traditional activities related to public services and commercial organisations in Catania.

These circumstances can be clarified through the analysis of the 90's industrial crisis caused both by the international recession and by the contemporary crisis occurred in the building industry (Ruggiero and Scrofani, 2001). At the same time, manufacturing registered an important recovery during those years thanks to the innovative impulse given by some industrial colossus, such as ST Microelectronics, together with the vital action of local SMEs (Tab.1).

All these companies have been characterised by the presence of high specialised personnel at low cost thus enable them to add value to their products and services. The present state of this area is mainly characterised by the presence of national and international companies which operate in the electronic sector and by those which belong to computer, telematics and telecommunications sectors. The first group is headed by the above-mentioned ST Microelectronics, a multinational company which until the 80's has been detached from local affairs while exploiting low cost and skilled local labour. During the 90's the situation has gradually changed and ST Microelectronics has started to co-operate with important local institutions, such as the University of Catania, and to be involved in many research projects, especially as far as nanotechnologies are concerned. ST Microelectronics has also contributed to the recruitment and development of high- specialised human resources, especially local engineers (in 1997 "Module 5" was inaugurated employing 800 researchers; "Module 6" will recruit 1500 researchers in 2004).

Another important aspect is that ST Microelectronics has strongly modified its relationships with the other Etna district's companies moving from a strictly vertical production to the decentralisation of some significant processing phases. Moreover, the research activity has been enhanced over the last few years with the co-operation of local researchers and scientists, as well as with National Research Council (CNR).

The industrial activity of the ST Microelectronics (STM) has been related to an advanced research carried out in collaboration with the researchers of the Departments of Physics, Chemistry, Electronic and Telecommunication, Mathematics and Informatics of University of Catania. The continuous development of research activity permits STM maintaining a rich pocketbook of new products, thanks to which the company can get lower negative effects on financial balance during international crisis and it can assume an active position in the world-wide market of microelectronics.

Although STM has contributed to the settlement of 23 international companies in the Etna district (Schillaci, 2001), another relevant aspect concerns with the birth of new firms which have been created both by STM ex-employers and by young entrepreneurs (national law n.44/1986), such as Antech (telecommunication and satellite), Wire Net (telecommunication) and Proteo (water management software system).

Local government policies have encouraged the settlement of national and international companies even by the establishment of important services, such the local counter “InvestiaCatania” whose main function is to provide administrative assistance for the creation of new businesses within 90 days. Thanks to its support, some of the most important multinational companies, such as Nokia and Omnitel, have decided to develop businesses in the area.

Particularly, the computer sector has had a boom: during the 90’s the international crisis operated a selection between software houses, those providing generic services disappeared. Today, the specialist software companies can offer high quality services thanks also to the employment of new-graduates in Matematics and Informatics, a University course created ten years ago.

Within the Information Technology sector major companies, such as Computer Science Corporation, IBM (with the first Mobile Technology Centre in Italy), Magneti Marelli, which is specialised in developing software for checking engines of motor car industry, have settled in Catania.

Among the local companies belonging to the so called “new-net economy” which embraces emerging high-tech fields, the Sicilian companies Cities on Line, which was founded in 1995, Proteo and Sea Soft, specialised in producing fiscal software sold to a commercial specialist group (Buffetti), can be considered as the most representative cases of vital businesses. Another field which has strongly developed in the last year is Biotechnology. Together with the numerous companies operating in this field, Etna Biotech was created last year in order to exploit some of the local natural resources, such as tomatoes and red oranges, for their use in medicine.

Within this general framework, the traditional distinction between production and research activities becomes weaker. Production and services activities merge into a single mixture which is not independent from the social contest where they have spread. As a matter of fact, cognitive and learning processes are unique and strictly related to the nature of the relationships networks which characterise the urban area. From this point of view, the establishment of networks and clusters, and the interaction and knowledge flows within them have been given increasing priority. Local institutions, such as Universities, CNR laboratories, Consorzio Catania Ricerche and the Innovation Relay Centre, together with local and international enterprises, are the major components of the “urban milieu”. With the help of all those intangible elements that constitute local culture, the urban *milieu* plays the key role of “incubator” towards SMEs innovation.

Over the last years local government policies have focused on building a new image of the city to be characterised of positive attributes, such as cleanness, dynamism and efficiency. These actions have been devoted both to increase the general sense of belonging among local citizens and to develop foreign tourism by emphasising the cultural resources. The success of the government’s action has been mainly determined by the socio-cultural background of the local citizenry which has favoured the development of collective learning processes not only among the specialised sectors but also in the society as a whole (Villa Veronelli, 2001).

The local government has had the ability to connect in network the own city with others, breaking off the old obsolete and crystallised social structure, by mean of introducing innovations and discontinuity. Those actors have been able to value the local cultural background, common also to the most people working in the innovative fields, and to develop an urban marketing strategy based on local identity. The cultural politic has been utilised in order not only to improve and promote a new image of Catania, but, also, for increase the tourist and reception aspects. Since 1994 a fundamental contribution to the creation of a new image of Catania has been played by the informal network named “Progetto Athena”, made of the most important private and public experts such as the mayor of the Catania, Enzo Bianco, the STM chief executive officer, Pasquale Pistorio, the IBM Italy chief, Catania Elio, the Rector of the University of Pisa, Luciano Modica, and some representatives of local and national newspapers.

In the innovative process University has played a key role especially for those aspects concerning with high learning and research processes. Moreover, in the last fifteen years University of Catania has changed the nature of its relationships with local enterprises. In 1987, the creation of a Consortium for “Microelectronics Research Studies in Southern Italy” (Cor.Ri.M.Me) with the co-operation of the above-mentioned ST Microelectronics and, after three years, the foundation of SuperLab (Surfaces and Interphases Laboratory) contributed together to the enhancing of the relationships between researchers and entrepreneurs. With the contribution of the European Social Fund, it has been recently instituted within University of Catania the “Centre for learning and vocational guidance”, C.O.F., which has recently encouraged University’s support for “Piano Cathanae”, Catania Human and Home Appliances Network for Advanced Experimentation.

The increase in private investments in the whole area derives, as stated before, both from the low cost of local skilled labour and from its recognised technological vitality. National government, for instance, designs measures to stimulate and facilitate innovation by supporting research carried out by companies and the creation of new technology-based firms (La Sicilia, 2002). Nevertheless, the whole area cannot be considered as a real industrial district to be compared to the American “Silicon Valley”. Though the information flows easily spread between research institutes and enterprises, some obstacles still remain within enterprises’ information exchanges. Thus origins from two main factors. First of all, the lack of private capitals, which are not direct at financing risky businesses, such us high-tech firms. The second reason can be attributed to the lack of co-operation between companies which mainly delegate to external intermediaries those activities concerning with technology transfer process. Among the above-mentioned local institutions, a key role is played by University and local Government while Media IRC- Innovation Relay Centre- , give a support for innovation and transnational co-operation in Europe primarily targeting on SMEs.

3. High Technology entrepreneurial system and the Innovation Centres.

Compared to other similar studies on Etna Valley (Schillaci, 2001; Caristo, Ciaccio, 2001; Cassar, 2000), the current one highlights the youth of this reality, which is mainly formed by enterprises founded after 1995 and by a large group founded between 1986 and 1994, because of the incentives and of the facilitation foreseen by two Italian laws: 44/1986 (on the young entrepreneurship) and 488/1992 (on the start-up and the expansion of the industrial activity). Among these enterprises, those with less than 50 employees, that is to say small sized companies, prevail, even if all the interviewed have declared that they have increased the number of their employees since their birth.

As far as the commercial aspect is concerned, the hi-tech companies, except for the multinational ones, sell their products or services within the local market, addressing just 15% of their production to foreign markets.

Unlike the characteristics of the Sicilian productive structure, the Etna Valley hi-tech entrepreneurs have started collaboration relationships among them and with external research centres. Those collaborations with the research centres concern mainly the University of Catania and sometimes the local government.

Anyway, if we consider that up to a little while ago the collaborations with public and University research centres were made only by big enterprises, the datum is encouraging.

Collaboration relationships among companies are mainly supply relationships with ST Microelectronics, even if relationships among different types of SMEs can exist. We are speaking about some information technology SMEs - Proteo, Datamax, Mediatres and Xenia in Catania, Datanet and Studio Informatica in Siracusa, ISI in Palermo – that, after having co-operated within the frame of the “Quality Project”, co-ordinated by IBM and Scientific and Technological Park of Sicily, have decided to establish a commercial, financial and research co-operation, creating a specific consortium.

Another example of collaboration among hi-tech SMEs is HBS Network, formed by 7 SMEs (A.T.E.V, Hitec 2000, MDS, Meccanotecnica Riesi, Samo Meccanica, Siatel, Unico), which already are STM suppliers (their co-ordinator, Mr Campisano, from Hitec 2000, is a former STM employee). The aim of the consortium is to identify some alternative markets for single companies, giving more complex know how as an added value which covers planning, mechanics, industrial processes control system, production lines optimisation and GIS systems.

Nevertheless, the collaboration aimed to functionally divide the work inside the production processes of good and services or aimed to acquire new technology are infrequent.

In the field of technology transfer in Catania, an important role is carried out by Media Innovation Relay Centre (IRC). Through the IRC, the urban enterprises are put in the net together with a certain number of productive systems and specific technologies of other local realities, projecting Catania in those productive systems’ and technologies’ nets which are developed in the international panorama. Media IRC represents one of the 68 nodes of the IRC Network of the Community programme *Innovation*

(fig.1). Each IRC is a window of its area on the European innovations, which supports enterprises and research organisations in transferring technologies from and towards Europe and supports transnational technology innovation and co-operation through a number of specialised services for the “business”.

Media IRC is co-ordinated by Consorzio Catania Ricerche, a no profit Institute, born in 1987 among Public Institutions, such as CNR (National Council of Research Centre), IRI (Italian Industrial State Holding), Catania University, Catania Trade Chamber and local industries (SGS Microelectronics). Later, other research centres, such as INFN (Nuclear Physics National Institute), and other local industries (i.e. AID Agricoltura Industrial Development SpA, SIFI Pharmaceutical industry S.p.A. and ELMEC SpA) joined the Consortium. Created to be an effective link among academic research, CNR and industrial research, its main aims are know-how transfer, technological innovation spreading, applied research, advanced training, services for companies and territorial development.

In the last years MEDIA IRC has carried out an important work, supporting innovation and partnership, exploiting those opportunities which come from the IRC Network, that is 68 nodes, 250 organisations in 30 Countries and a staff of 1000 persons. The results of the last two years are synthesised in 65000 assisted customers, mainly SMEs, and 5000 technology transfer negotiations.

Thanks to the insertion of technology offers and requests and to partner search in the net, MEDIA IRC is able to identify technologies and partners and, as a consequence, to prepare transnational innovation projects in agro-food, transport, aerospace, environment, materials and IT fields. For each of these sectors thematic groups are formed. They represent specific sub-net formed by those IRCs whose territorial research and industrial vocation fits with the interests of the group. MEDIA IRC is part of the “Nano and Micro Technologies Thematic Group”, which involves those sectors linked to the so-called “Etna Valley”: telematics, microelectronics, software, control systems, robotics (tab.2). In the last two years MEDIA IRC has been an intermediate for about 50 international negotiations and it has offered its services to several Etna Valley’s enterprises (tab.3), giving them the opportunity to collaborate in research projects with foreign partners and to formulate the most correct technology offer or request. In fact, it is known the difficulty of SMEs to express the need of new technology and to effectively talk to foreign technicians, in order to catch the already available technological opportunities.

The activity of these innovation centres reduces the physiological uncertainty that characterises the development of new technologies, which occurs when an enterprise wants to introduce a technology and has to face the complex and expensive selection process among the most productive international technologies, and it contributes to the creation and accumulation of information in the metropolitan area of Catania. In this city the innovation centres seem to be fundamental, because they can contribute to make the urban *milieu* ready to activate a number of continuous collaborations among the economic actors of the area, creating social and economic processes, which are useful to collectively create and exploit a large quantity of specialised and innovative knowledge.

(*) Although this work is fruit of the combined research of the two writers, the first and the second section were written by Luigi Scrofani, and the third by Francesco Cappello.

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Tabella 1: the most important hi-tech enterprises in the Provincia of Catania.

NAME	ACTIVITY	SITE
Aid	Progettazione e realizzazione robot per agricoltura	Zona industriale di Catania
Antech	Produzione componenti ed apparecchiature per telecomunicazioni satellitari	S.Giovanni La Punta
Cities on line	Internet provider e prod.servizi informatici	Catania
Compunet	Produzione software e servizi informatici	Zona industriale di Catania
Copin	Produzione di software gestionale	Tremestieri Etneo
CSC	Produzione di sistemi di gestione informatica per grandi aziende	Catania
Dexelop	Solution provider	Catania
Elmec	Precision engineering	Tremestieri Etneo
E.T.C.	Epitaxial technology center	Catania
Eurat	Produzione sistemi di automazione e controllo	Gravina di Catania
Hitech	Progettazione e produzione clean rooms	Catania
IBM	Mobile technology center sull'e-business	Catania
Ion Beam	Fornitura parti per equipments e servizi	Gravina di Catania
Magneti Marelli	Produzione di software per autoveicoli	Zona industriale di Catania
Makers	Telecomunicazioni, servizi e sviluppo software	Catania
Marconi Impianti	Impiantistica telefonica e radiovisiva	S.Gregorio di Catania
Marconi Communications	Produzione sistemi di comunicazione e reti satellitari	Misterbianco
MDS Italia	Prodotti per clean rooms	Catania
Media on line	Produzione di software per internet	Catania
Meridionale Impianti	Impiantistica e clean room per il settore dei semiconduttori	Zona industriale di Catania
Mestor	Produzione di software sui rischi sismici	Catania
Nt&t	Produzione componenti passivi per telecomunicazioni (fibra ottica)	Belpasso
NOKIA	Centro di R&S per applicazioni telematiche intelligenti	Zona industriale di Catania
Olin	Assistenza tecnica per impiego prodotti chimici, fotolitografici, inorganici	Zona industriale di Catania
Omnitel	Call center di telefonia mobile	Catania
Openline	Società di telefonia fissa	Catania
Phonenix Elettronica	Produzione di strumentazione elettronica	Catania
Robotics	Progettazione e prototipizzazione sistemi di controllo ambienti industriali	Viagrande
Proteo	Produzione di software per la gestione di sistemi idraulici	Catania
Robotank	Produzione macchinari per la chimica dei semiconduttori	Zona industriale di Catania
SAT	Produzione di frame per semiconduttori	Aci S.Antonio
Sea Soft	Produzione di software per studi tecnici, imprese edili ed amministrazioni pubbliche	Zona industriale di Catania
Sistemidata	Produzione di software	Catania
ST Microelectronics	Produzione di circuiti integrati a semiconduttore	Zona industriale di Catania
S.T.S.	Produzione di software gestionale	S.Agata Li Battiati
Tecnosmedia	Progettazione di componenti microelettronici	Catania
Tegal	Produzione e assistenza macchine ad attacchi plasma	Belpasso
Teleservice	Sicurezza e automazione per aziende	Catania
Telnet	Telecomunicazioni e telematica	Catania
Teseosistemi	Produzione di servizi informatici	Tremestieri Etneo
Wire Net	Produzione di cavi per telecomunicazioni	Belpasso
Xenia Progetti	Produzione di software	Acireale
Zetel	Produzione di software gestionale e per il turismo	Tremestieri Etneo

Tabella 2: The IRC units operating in Nano & Microtechnology network whose Media Relay Innovation Centre belongs.

IRC NAME	ORGANISATION
IRC HELP-FORWARD in Greece	HELP-FORWARD Network (PRAXI)
IRC West Switzerland	Centre d'appui scientifique et technologique - Cast EPFL
IRC Northern England and Nord Manche	Agence Nationale de Valorisation de la Recherche - Nord et Pas de Calais
IRC for Wallonia	GIE-CEI Groupement d'Intérêt Economique des Centres d'Entreprises et d'Innovation de Wallonie (EIG-BIC)-CRIW
IRC Sicily - Calabria - MEDIA	Consorzio Catania Ricerche
IRC Latium-Abruzzi-Sardinia - CIRCE	APRE - Agenzia Per La Promozione Della Ricerca Europea
IRC North Rhine-Westphalia	ZENIT - Zentrum für Innovation & Technik in Nordrhein-Westfalen GmbH
IRC Northern England and Nord Manche	RTC North Ltd
IRC Finland	Tekes - The National Technology Agency
IRC Northern Germany	VDI/VDE Technologiezentrum Informationstechnik GmbH
IRC Lower Saxony/Saxony-Anhalt	Universität Hannover
IRC Hessen-Rhineland-Palatinate	TechnologieStiftung Hessen GmbH
IRC Hessen-Rhineland-Palatinate	IMG Innovations-Management GmbH
IRC Lombardy - LARICE	Federazione delle Associazioni Scientifiche e Tecniche
IRC Netherlands and Iceland	Senter
IRC South Germany/Deutsch Schweiz	Thüringer Agentur für Technologie und Innovations GmbH (THATI GmbH-IRC)
IRC Centr'EST	Chambre Régionale de Commerce et d'Industrie de Bourgogne
IRC Rhône-Alpes - Auvergne	Chambre Régionale de Commerce et d'Industrie de Rhône-Alpes
IRC South Germany/Deutsch Schweiz	Osec Business Network Switzerland

Tabella 3: Enterprises and R&S Centre that have contacted Media Innovation Relay Centre to find partnership in Microelectronic, software and telecommunication sectors in IRC Network in the last two years.

NAME ENTERPRISE	ACTIVITY	IRC SERVICE (*)	TYPE OF ORGANIZATION, CITY (NATION), CONTACTED THROUGH THE NODES OF IRC NETWORK (**)	TECHNOLOGY AREA PROJECT
Antech	Antenne satellitari	PS	CR in Parigi (F)	Fuzzy Logic
CIET	Impianti condizionamento	PS	CR in Saragozza (S); MO in Manchester (UK)	Automatic control system
Covin	Trasporti	PS	CR in Parigi (F)	Project engineering
SAT	Frames metallici in rame per applicazioni in microelettronica	PS	CR in Catania	Surphace analysis
ANIEM-Associazione Imprese Edili	Costruzioni	PS	CR in Tenerife (ES); CR in Islanda; CR in Madera (PO).	New technologies for construction sector
Xenia	Software	PS	CR in Oslo (No);	E-work
Elmec	Elettromeccanica	PS	CR in Dublino (IRL); CR in Manchester (UK); SME in Madrid (ES)	Innovation in advanced energies technology
Inform S.r.l.	Informatica e telematica	PS	CR in Cambridge (UK);	Atmospheric Quality and Civil Emergency Response System
PROTECO	Georadar systems	TR	SME in Parigi (F); SME in Atene (GR); CR in Ostrava (CZ); CR in Limoges (F).	Monitoring and alarming system for detection in ground water
Proteo	Telematica	PS	CR in Magdeburgo(D); SME in Madrid (ES); SME in Riga (LATVIA);	Software System For Utilities Management
PST Sicilia	Advanced services	PS	MO in Madris (ES)	E- technologies Level Increase for SMEs
GGG Elettromeccanica	Elettromeccanica	PS	CR in Parigi (F)	Project engineering
HITEC	Microelettronica	TO	CR in Telaviv (ISR)	Innovative process for metal plating
L'informatica	Software	TR	CR in Bologna (IT)	Datawarehouse
Seasoft	Software	PS	CR in Amsterdam (NL)	Advanced software
VED	Advanced Material	TO	Wroclaw (PO)	Microwave technology
Consorzio Catania Ricerche	Innovation	PS	MO in Madrid (ES); CR in Tenerife (ES); CR in Manchester (UK).	Initiative Innovation in the Construction Sector
ATEV	Microelectronics equipment	PS	CR in Cambridge (UK)	Ultrasonic technology
Simplast	Materials	TR	SME in Paris (F); Large industry in Zurich (SW).	Welding equipment
CAALMA	Telematics	PS	SME in Tenerife (ES); CR in Valladolid (ES).	Robotics
NAME R&S CENTRE				
Dipartimento di Matematica (UNICT)	Matematics	TO	SME in Parigi (F)	Fuzzy Logic
Dipartimento. di Elettronica (UNICT)	Electronics	PS	CR in Bucarest (RO); CR in Leoben (A); CR in Crete (GR); CR in Cherbourg-Octeville (F).	Industrial risk
Dipartimento di Scienze Chimiche (UNICT)	Surphace analysis	TO	CR in Seibersdorf (A); CR in Teltow (D); SME in Oberursel (D).	Adhesives and nanocomposits
Ingegneria (UNIME)	Telecommunication	PS	CR in Oslo (N).	Electronics and Cybernetics

Legenda:

(*) **PS:** partner search; **TR:** technology research; **TO:** technology offer.

(**) **CR:** R&S Centre ; **SME:** small and medium enterprises; **MO:** Management organisation