
A comparative study of four West Mediterranean regions: the role of technology interface structures

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Abstract: Small and medium enterprises (SMEs) have a very important role in European economies, particularly in Mediterranean countries. They are important for job creation, for economic growth and development and for bringing innovations to market. This aspect of technological innovation and the transfer of technology to the markets are particularly relevant in today's economies. With the intent of studying the interface structures that contribute to the creation of new companies and to research and development, a study was made on four Mediterranean regions: Algarve, Andalucía, Sicilia and Umbria. The four regions are compared in terms of the existence of these interface structures, like business incubators, technological parks and venture capital companies and in terms of economic activities, innovativeness and strategic intentions. Conclusions are drawn, based on these comparisons. This communication is based on an INTERREG III project, named Technopolis, supported by the EU, through the MEDOCC line.

Keywords: technological entrepreneurship; technology transfer; innovation networks; technology interface structures; regional development.

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1 Introduction

Everyone seems to agree that we must develop the regions, support the creation of new businesses and support entrepreneurship (Allen and Weinberg, 1988; Reynolds et al., 1994, 2002; Palich and Bagby, 1995; Shane and Venkataraman, 2000; Gartner, 2001; Gaspar and Pinho, 2007). The problem is that we do not really know how to do it (Sociedade Portuguesa de Inovação, 2001; Gaspar, 2006). This subject is relatively new in management literature and we are still looking for policies to encourage entrepreneurship and the creation of new businesses.

It is known that technology interface structures (incubators, venture capital firms, universities, technology parks and others), or TIS, can have a very important role in this framework (Hu et al., 2006; Gaspar, 2006). We also know that since the Second World War and until now, three generations of TISs have emerged, namely: the generation of techno, years 50–70 of the last century; the generation of innovation ecosystems, years 80–90; and the generation technopolis or clusters, which asserts itself presently (Dias, 2007).

We will assume that the development of the regions in question is the result of the efforts of local organisations, including companies and organisations of the 'meso-economie'. The transformation of each region will depend, however, on the projects of individual organisations and it will be influenced by changes in other organisations in the region. This communication is, however, partially based on theories of transorganisational development (Boje and Bosile, 2003).

This communication is a product of a research project called MEDOCC Technopolis – an INTEREREG III-B MEDOCC project involved in the launch of a network TISs type of 'technopolis' in the vast regions of the Mediterranean. It was started by four MEDOCC regions – the Algarve, Andalusia, Sicily and Umbria – but the objective is to expand the network to other regions of the Mediterranean, including European and African regions surrounding the Mediterranean Sea. To deepen our knowledge of the technology actual interface structures in the different regions of the western Mediterranean and, in the future, increase the support for entrepreneurship, we will study and compare their reality at present. In the process, the four regions and the innovation policies adopted in each one are characterised.

2 Previous research

Regional development has been connected to the existence of local institutions that support the creation of new companies, like business incubators (Kuratko and LaFollette, 1987; Allen and Weinberg, 1988; Campbell, 1989; Honadle, 1990; Peters et al., 2004; Sharif and Ahmed, 2006) or science and technology parks (Lin, 1997; Sofouli and Vonortas, 2007). The positive impact that business incubation has on startups' survival rate and on entrepreneurship, in general, has also been documented by several studies (Allen and Rahman, 1985; Haugen, 1990; Sherman, 1999; Finer and Holberton, 2002; Albert, 2003; Peters et al., 2004; Aernoudt, 2004; Hackett and Dilts, 2004a, 2004b; Pena, 2004). There is also wide evidence that these local institutions, that fit the concept of TIS used in this research, have a positive impact on the creation and success of high-tech startups (Nam, 2000; Sharif and Ahmed, 2006; Roper, 1999; Lin, 1997).

Entrepreneurship has also been recognised to have a positive impact in economic development (Allen and Weinberg, 1988; Reynolds et al., 1994; Palich and Bagby, 1995; Shane and Venkataraman, 2000; Gartner, 2001; Reynolds et al., 2002; Gaspar, 2006; Gaspar and Pinho, 2007). However, the strategies adopted by these TIS seem to vary across different settings (Lin, 1997; Roper, 1999; Nam, 2000; Pena, 2004; Sofouli and Vonortas, 2007), making believe that different regions in Mediterranean Europe may see different approaches to technology transfer and entrepreneurship development efforts. This goes along the reasoning of many authors, who claim that the working of these TIS has not been thoroughly studied (Haugen, 1990; Finer and Holberton, 2002; Albert, 2003; Hackett and Dilts, 2004a, 2004b).

Considering all this, the study of these four Mediterranean regions and how their TIS work, may be a considerable contribute to the understanding of both the influence of TIS in local development and entrepreneurship development; and on the other hand, the success strategies adopted by TIS to attain their purposes. Therefore, one of the objectives of this study will be to produce 'best practices' recommendations for technology transfer, entrepreneurship increase and regional development.

3 Research question and hypothesis

Our main research question is 'how can TIS contribute to the development of entrepreneurship'. Based on the literature surveyed, we can formulate a couple of hypothesis, to be studied:

- 1 the strategies adopted by TIS to attract startup projects and to evaluate the performance of the startups they support will differ among regions
- 2 effectiveness of TIS support will not vary much among these four regions and will be high.

4 Data collection

The first phase of the research project was directed at leaders of organisations participating in Project MEDOCC Technopolis, namely:

- PTA – Technology Park of Andalusia, represents the region of Andalusia (Spain)
- the PSTS – Science and Technology Park of Sicily, which (with its several poles in various cities small and medium-sized) represents the entire region of Sicily (Italy)
- the Sviluppumbria – Regional Development Corporation of Umbria, which represents this region of central Italy
- the Municipalities of Lagos and Tavira, which represent the region of the Algarve (Portugal), who also have the support of the University of the Algarve.

It should be noted that the choice of partners for the project MEDOCC Technopolis was not made at random. The intention of the promoters was to create a network of organisations and Euro-Mediterranean regions with diverse experiences and representing several generations of TISs that have been created in Europe after the Second World War.

Indeed, there were, first of all, two technology parks that represent the first two generations of interface structures. The ATP – the park is the largest of Spain – is a ‘technopolis’ classic, built by public authorities and in accordance with the standards of 50–70 years. The PSTS is an interface structure rather in the style of innovation ecosystems years 80–90 (second generation) with a lighter size and multipolar; in addition, it was created by the initiative of University of Sicily in partnership with businesses and local authorities in several cities in the region of Sicily.

Then there is a regional development centre in Italy – Sviluppumbria – which is anchored in a highly developed economy and where small and medium enterprises (SMEs) have almost spontaneously organised into ‘clusters’ and ‘ecosystems’ dedicated to export. The ambition of its leaders now is to transform some of these ecosystems (the famous ‘industrial districts’ in Italy) to ‘technological districts’ – a typical Italian model structures interface such as ‘technopolis’.

Finally, we have two municipalities in the Algarve – Lagos and Tavira – who have no previous experience in the field of TISs. They are trying to create from scratch a TIS of the last generation – the Algarve Technopolis – a multipolar character, and which will be dedicated in particular to renewable energy development and exploration of marine resources. This will become in the future a knowledge-based innovation network that will contribute to the increase of technology transfer do the market. Hopefully, it will potentiate the production of ‘glocal’ knowledge, by combining the local research facilities and this new network.

In short, given the heterogeneous nature of the partners and regions concerned, it was necessary to create a first phase in the work of the research where the objective is to contribute to the creation of a common heritage of ideas among the participants of the project, as regards the issue of TISs and their function as a tool of regional development. Under these conditions, data collected in the first phase of the research assume a rather qualitative nature. Questionnaires were translated into the three native languages of these four regions (Portuguese, Spanish and Italian) and answers were collected and then discussed (after being all translated into French) at a public conference in Terni, Umbria, February 2008.

Phase two of the research project consisted of seven case studies on TIS operating in these four regions. For the second phase, questionnaires were translated into the

three languages and the local partners had them distributed to local TIS. Then the answers were analysed in interviews with those TIS, collecting remaining information for case study elaboration. These were then translate to French and published. The official language of the research project was French, so all documents and questionnaires were originally written in that language, before being translated to the three local languages. The TIS in these case studies helped create over 600 startups, most of them still in business. Therefore, our sample for phase 1 consisted of five partner organisation in the four regions, while for phase 2, the sample consisted of eight TIS.

5 Results

Data collected in the first phase was very important to characterise the four regions in terms of policy and economic development.

Figure 1 Main economic activities – agriculture (see online version for colours)

• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> •• Textile sector •• Agro-alimentary sector •• Andalusia is the first olive oil producer on a worldwide scale. 	<ul style="list-style-type: none"> •• Culture of the olive-tree •• Culture of the vine •• Breeding of porcine and bovines •• Culture of the tobacco 	<ul style="list-style-type: none"> •• Horticulture and biological and conventional fruticulture, in full field and under greenhouse •• Vine growing •• Animal husbandry and dairy productions - cheese-making •• Cereal culture •• Culture of Olives •• Fish

Figure 2 Main economic activities – industry (see online version for colours)

• Algarve	• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> •• Tourist real estate •• Construction and habitat •• Food industry •• Photovoltaic energies 	<ul style="list-style-type: none"> •• Tourist real estate •• Construction and habitat •• Telecommunications and development •• Sector of Bioinnovation and Biotechnologie •• Photovoltaic, Renewable, Wind energies... •• Sector of creativity 	<ul style="list-style-type: none"> •• Metallurgy and iron and steel industry •• Textile clothes industry (cashmere and hosiery high range) •• Advanced and mecatronic mechanics •• Chemistry •• Agroalimentary (oil, wine, meat, cheeses, truffles, pastes, pastry making, bread, provende for livestock) •• Paper, paper mill, edition 	<ul style="list-style-type: none"> •• Energy-generating products (oil, electric power...) •• Agro-alimentary products •• BTP •• Micro-electronics •• Data processing •• Textile, clothing, skins and shoes

5.1 Major economic activities of regions

To start, we started by characterising the main economic activities in each region. Regarding agriculture, if one takes the two Italian regions, one can see (Figure 1) that, on a common basis – the Mediterranean countryside – there is a wide range of activities and economic structures.

Next, we compared the industries (Figure 2) and have found an even wider diversity. Finally, we compared the services (Figure 3). In all four regions, tourism is the most common, but there is a wide variety of other services.

Figure 3 Main economic activities – services (see online version for colours)

• Algarve	• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> •• Tourism (housing) •• Trade •• Restoration 	<ul style="list-style-type: none"> •• Tourism •• Services directed To the Tics •• Bioinnovation and Biotechnologie •• Energy renewable, photovoltaic, wind... •• Creativity •• Infrastructures of transport 	<ul style="list-style-type: none"> •• Tourism •• Logistics and Transport •• Advanced services with the companies •• University, research and high formation 	<ul style="list-style-type: none"> •• Tourism •• Trade •• Telecommunications •• Transport •• Mail service and banking

We must add that tourism and real estate have, in the Algarve, an exaggerated importance in relation to other economic activities. The other three regions are more diverse and, most importantly, they are hosting activities more advanced and more successful in international markets.

5.2 The knowledge economy in these regions

The second theme of EIEE was the knowledge economy. It was asked to the executives running these organisations what is the meaning for them, of the term ‘knowledge economy’. The answers are summarised in Table 1.

Table 1 What’s the meaning of ‘knowledge economy’?

New phase of the economic history which, according to certain economists, we entered since the end of last century	0
The economy of knowledge sets up the knowledge, either like a factor of production, but like a production with whole share which makes of the innovation, not a stage of the accumulation of a stock of values, but like a continuous process determining the competing development	Algarve
Dynamics of the knowledge, knowledge management, collective intelligence... Three concepts which translate the increasing share of the immaterial one in the production of the richness and the economy of knowledge	Algarve, Andalusia, Umbria, Sicilia
Other: All that relates to the technology transfer like technological parks, public administrations, universities, technological companies, centres... the called networks of knowledge acquire also a great importance	Andalusia

Figure 4 What knowledge economy activities were created in the last years? – Agriculture (see online version for colours)

• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> •• Modernization of the traditional sectors •• Various companies of the traditional sectors, work in close cooperation with the university 	<ul style="list-style-type: none"> •• Modes of treatment of the residues of oil •• New knowledge in the sector of the provende and optimization of the conditions of breeding •• Studies for the characterization of the properties of the olive oil virgin extra and its effects on health of the man •• Studies for the use of energy cultures •• Recovery and conservation of vegetable bio-diversity •• Characterization of the minor components of the wines and study on the health of the man 	<ul style="list-style-type: none"> •• Biological products •• Products of niche •• Typical products •• Productions of quality •• Production of agricultural and forest biomass

Figure 5 What knowledge economy activities were created in the last years? – Industry (see online version for colours)

• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> •• Technology transfer •• Financing of I+D •• Financing with d'entreprises creation •• Organization of employers' meetings 	<ul style="list-style-type: none"> •• Iron and steel activities: innovations of process and product of the stainless steels, the means and large forged for the energy production, of titanium (sheets, coils and tubes) •• Development of the vertical activities: production of stainless steel tubes, production of catalytic pots •• Agroalimentary industry (oil, wine, meats, fromages, truffles, pastes, pastry making, bread, provende for livestock) •• Chemistry: development of the plastics bio- dégradables, development of the plastics recycled for the production of biocarburant •• Chemistry: pole integrated for the production and the work of the propylene (node, wire, film) •• Mechanical engineering industry in connection with the sector of aeronautics and the aerospace one •• Mechanical engineering industry in connection with the sector of the car and the production of components. 	<ul style="list-style-type: none"> •• Electronics •• Microphone and nano systems •• Agro-alimentary

The majority response is clearly the third. That is to say, one that combines the three concepts of knowledge economy (dynamic knowledge, knowledge management and collective intelligence), which reflect the increasing share of intangibles in the production of wealth. One can say that this is a relatively advanced concept, which also could be improved with elements salvaged from the other alternative answers...

Then we asked people to use the concept of ‘knowledge economy’ to identify activities that were created in their region, in recent years. Figures 4, 5 and 6 summarise the responses received.

This difference in directions of development is even more evident to industry (Figure 5). We also compared the main knowledge economy activities in the four regions (Figure 6). There are also large differences between them.

Figure 6 What knowledge economy activities were created in the last years? – Services (see online version for colours)

• Algarve	• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> •• Implementacion of the technologies of communication and information to the services public •• Tavira DIGITAL •• Lagos DIGITAL •• etc 	<ul style="list-style-type: none"> •• Relationship to I university •• Systems of pre incubation •• Systems d incubation •• Internationalization of the companies •• Encouragement with the development of employers' collaboration. •• Close connections between the university and the world of the company 	<ul style="list-style-type: none"> •• Consultation and assistance in the innovation of process and product; •• Consultation and assistance for the support of process of internationalization •• Consultation and assistance in the selection and the staff training •• Development of logistics and the infrastructures 	<ul style="list-style-type: none"> •• Telecommunications •• Foreign trade

In face of this information, we find that there is a clear difference between Umbria and the other three regions, regarding the level of overall economic development and dissemination of the knowledge economy in particular. This conclusion is reinforced by responses to questions 3 and 4 coming on.

Figure 7 Which activities were the most modernised in the last years? – Agriculture (see online version for colours)

• Algarve	• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> •• Aquiculture •• Horticulture in greenhouse •• Fleuriculture in greenhouse 	<ul style="list-style-type: none"> •• Modernization of the food sectors •• Modernization of the textile sectors 	<ul style="list-style-type: none"> •• Modes of harvest of the tobacco •• Modes of harvest of the grape •• Modes of harvest of olive •• Process of the working methods of olives with oil •• Irrigable systems •• Techniques of care of the tobacco •• Monitoring of phenology •• Land management techniques 	<ul style="list-style-type: none"> •• Vine growing •• Culture of Olives

5.3 The activities that are being modernised in the regions

Figures 7, 8 and 9 have answers on activities that were most modernised in the four regions, in recent years. The activities that were most modernised in recent years (Figure 7) are also very different between the regions.

The same thing happens to industry (Figure 8).

Figure 8 Which activities were the most modernised in the last years? – Industry (see online version for colours)

• Algarve	• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> •• Construction •• Food industry 	<ul style="list-style-type: none"> •• Development software •• Biotechnological development •• Medical Bio development •• Help in potential of telecommunications •• Infrastructures of telecommunications 	<ul style="list-style-type: none"> •• Iron and steel activities: innovations of process and product of the stainless steels, the means and large forged for the energy production, of titanium (sheets, coils and tubes) •• Development of the vertical activities: production of stainless steel tubes, production of catalytic pots •• Agroalimentary industry (oil, wine, meats, fromages, truffles, pastes, pastry making, bread, provende for livestock) •• Chemistry: development of the plastics bio-dégradables, development of the plastics recycled for the production of biocarburant •• Chemistry: pole integrated for the production and the work of the propylene (node, wire, film) •• Mechanical engineering industry in connection with the sector of aeronautics and the aerospace one •• Mechanical engineering industry in connection with the sector of the car and the production of components. 	<ul style="list-style-type: none"> •• Agro-alimentary products •• Artisanal products •• Manufacturing products

Finally, we also registered the same divergence in the service sectors that are being modernised (Figure 9).

Figure 9 Which activities were the most modernised in the last years? – Services (see online version for colours)

• Algarve	• Andalucía	• Umbria	• Sicilia
<ul style="list-style-type: none"> • Tourism/Hoteles • Services public local elections • Logistics 	<ul style="list-style-type: none"> • Services d innovation • Financing with I+D • Contribute to the financing of the creation of company • Access to the international market 	<ul style="list-style-type: none"> • Consultation and assistance in the innovation of process and product; • Consultation and assistance for the support of process of internationalization • Consultation and assistance in the selection and the staff training • Development of logistics and the infrastructures 	<ul style="list-style-type: none"> • Tourism (Agriturismo, Rural Tourism, gastronomical Tourism) • Trade electronic • Transport

It is clear that there is a region – Umbria – which presents a dynamic modernisation which is typical of advanced economies. And there are three other less advanced regions, trying to mix the modernisation of traditional Mediterranean activities with the creation of ‘cutting edge’ activities... In any case, as we shall see in the next point, these activities have not yet a sufficient ‘critical mass’...

5.4 The creation of new activities

Figures 10, 11 and 12 have basic information on new activities that have been created recently in the three areas of conventional economic regions in question. Regarding agriculture (Figure 10), the responses have told us that the regions have created new activities completely different.

Figure 10 What new activities were created in the last years? – Agriculture (see online version for colours)

• Andalucía	• Umbria	• Sicilia
<ul style="list-style-type: none"> • Promotion of Mediterranean l alimentation • Promotion on an international scale of companies of the primary sectors 	<ul style="list-style-type: none"> • Creation of energy dies • Introduction of the culture of the flax • Creation of short dies in the agroalimentary one and animal husbandry • Development of rural tourism • Culture of varieties autochtones in process of extinction • Network between local and foreign companies 	<ul style="list-style-type: none"> • Productions of quality • Typical productions • Productions of niche • Biological productions • Production of agricultural and forest biomass

The same thing happens in the industry (Figure 11) and services (Figure 12).

Figure 11 What new activities were created in the last years? – Industrie (see online version for colours)

• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> •• Photovoltaic sector •• Sector of Bioinnovation •• Renewable sector d'énergie •• Telecommunication, wifi, wireless, wimax 	<ul style="list-style-type: none"> •• Electromagnetism applied to the diagnostic apparatuses •• Plastic panels with special film for mural preparing and floors •• Rooms for simulation of the ambient conditions, apparatuses for the cold applied to research in the laboratories of biology, universities and hospitals •• Production of biodegradable plastics to start from vegetable components •• Technologies of solar energy photovoltaic and thermodynamic •• Production of long titanium products •• Sector of the electronic and electromechanical installation •• Mechanical components for the aircraft industry and aerospace •• Technologies and services for mobile telecommunications. Production of apparatuses for mobile telephony and multimédiaux contents sector telephony and televised sector 	<ul style="list-style-type: none"> •• Agro-alimentary •• Advanced biology •• Renewable energies

Figure 12 What new activities were created in the last years? – Services (see online version for colours)

• Algarve	• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> •• Renewable energies 	<ul style="list-style-type: none"> •• Development and services intelligent hearths •• D'aide creation with the financing of I innovation •• Help in potential of the technological basic companies 	<ul style="list-style-type: none"> •• Center European for the nanotechnologies •• Research center for the cells staminales •• Research center on technologies of the car 	<ul style="list-style-type: none"> •• Cultural goods •• Transport •• Communication and Information technologies

To complete our evaluation on the ‘critical mass’ of new activities in the regions, we requested information about R & D activities. In Figures 13 and 14, participants rated sectors regarding the research that is going on as low (f), strong (F) or very strong (TF).

In conclusion, there are major differences between regions as regards the themes of Figures 13 and 14.

Figure 13 Research done in the region (see online version for colours)

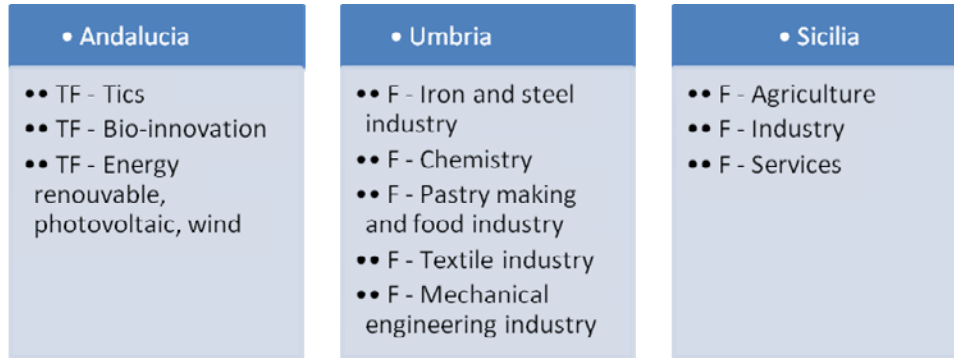
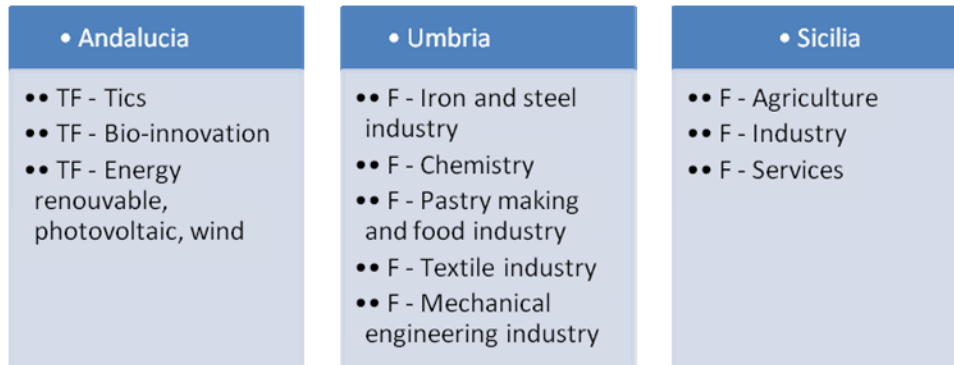


Figure 14 Companies working on those sectors that can use the research (see online version for colours)



5.5 Regions and their future plans

Finally, we asked the partners of Technopolis what are the sectors that the local authorities want to develop. The answers (Figure 15) show that there is not too much in common among the four regions.

The last question was to quantify how many interface structures exist in each region, in this case, venture capitalists and incubators (Table 2). The figures, in this case, are not too different among the four regions.

The future projects of the four regions are not so different from each other. In addition, the TISs that already exist are a similar number... Except the case of Umbria, who believes more in the lines of ‘technological districts’ models, typically Italian, rather than the standards of other European regions.

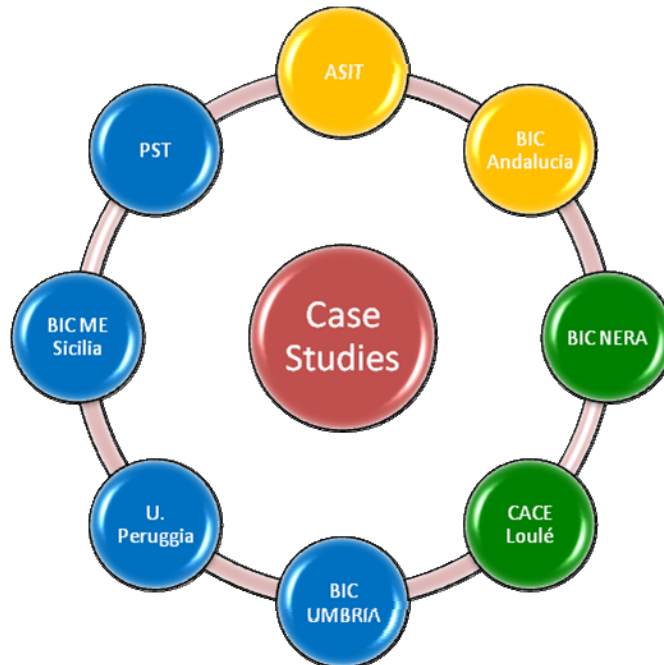
Figure 15 What sectors local authorities want to develop (see online version for colours)

• Algarve	• Andalusia	• Umbria	• Sicilia
<ul style="list-style-type: none"> • Energies renouables • Industry (Creation of a zone industrielle) • Renewable energies • Exploration of the resources of the sea • Creation of a multipolar technological park • Cultural and medical equipment of quality 	<ul style="list-style-type: none"> • Sectors of Telecommunication • Projects of R&B, Multisector • Contribute to the creation of the basic companies technological • Encouragement of the I+D (investigation and development) 	<ul style="list-style-type: none"> • Die of cultural and éco-bearable tourism • Search and development for new materials • Sector of the mechanics of précision and the mécatronique one • Strengthening of the points of excellence of traditional productive fabric (iron and steel industry, mechanics, textile, food) 	<ul style="list-style-type: none"> • Human resources, Research, Innovation and Technology transfer, Energy and environment • Social services, territorial attractivity, natural resources and cultural, mobility • Productive systems and employment, systems urban, attraction of the investments, governorship

Table 2 Technology interface structures

Regions	Risk capitals	Incubators
Algarve	4	4
Andalusia	6	4
Umbria	1	2
Sicilia	1	4

Figure 16 Case studies (see online version for colours)



6 Case study

The second phase of the research consisted in carrying out case studies of TISs representative of each region. In Spain, two cases were studied, the BIC and ASIT, in Italy, one case study was done in Umbria and two in Sicily, while in Portugal of two cases were studied [Institute of Unemployment and Professional Formation (IEFP) and NERA). A description of these cases follows.

6.1 Asociación al Servicio de la Investigación y la Tecnología

The Asociación al Servicio de la Investigación y la Tecnología (ASIT) runs a pre-incubator in the Technology Park of Andalusia. Five startups have already been created.

Figure 17 ASIT, Andalucía (see online version for colours)

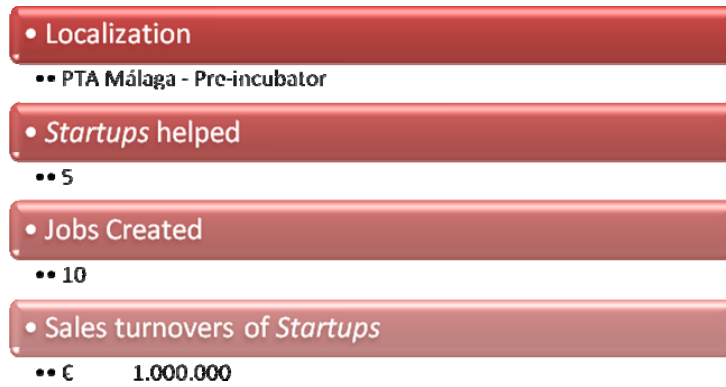
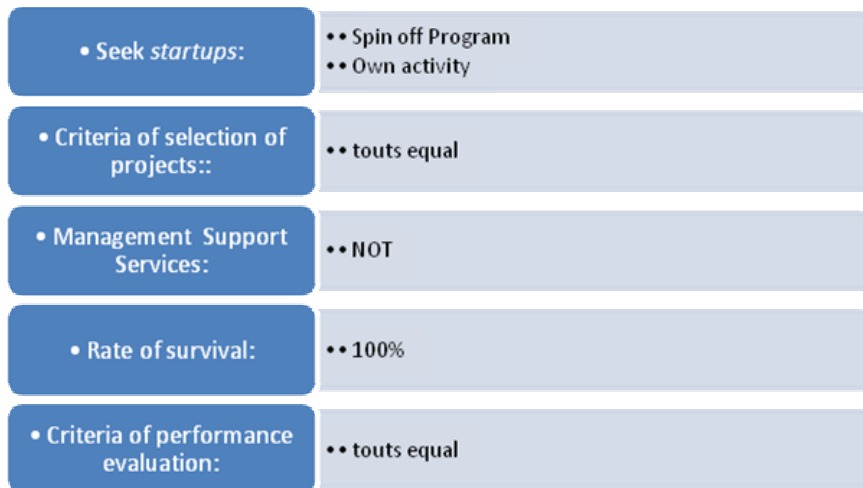


Figure 18 ASIT details (see online version for colours)



The pre-incubator attracts projects with stimuli to the spin-offs of academics and develops its own activities with that purpose. The ASIT does not give more importance to a specific group of selection criteria, all are important for them, and the same thing about the criteria to evaluate the performance of startups.

The startups that have been created in the incubator of ASIT are all active, none has closed.

Figure 19 BIC EURONOVA, Andalucía (see online version for colours)

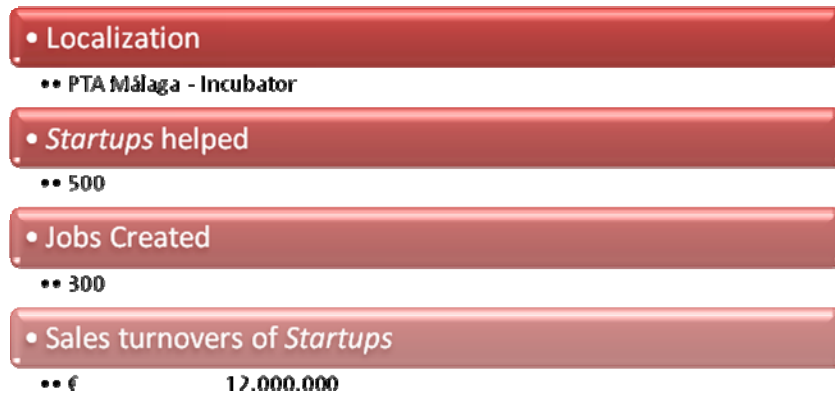
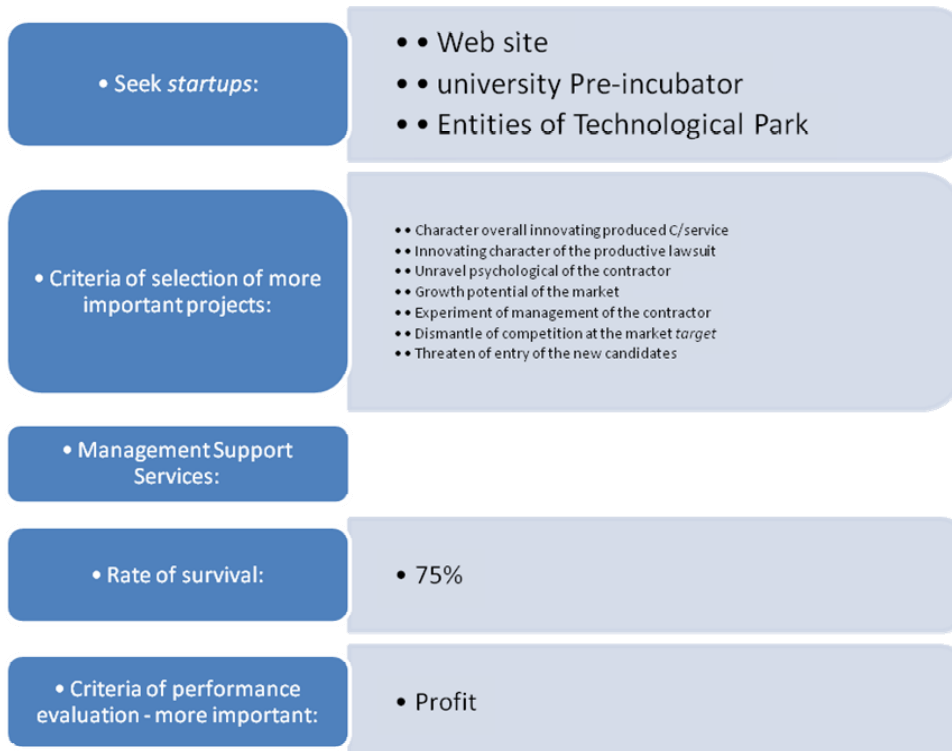


Figure 20 BIC EURONOVA details (see online version for colours)



6.2 BIC EURONOVA

The Business Incubation Centre (BIC) EURONOVA is a business incubator that is installed at PTA, the Technology Park of Andalusia, Malaga. It is a part of the network European Business and Innovation Centre (EBIC). The BIC EURONOVA has seen 500 startups, with a survival rate of 75%.

The strategies used by EURONOVA to attract new projects are the use of its website and building a strong connection to the pre-incubators and other entities in the park. The selection of projects is made with a very strong attention to the criteria of innovativeness of the project, the human capital of the entrepreneur and market potential. There are no management support services to the startups and 75% of these companies survive after entering the market.

The BIC EURONOVA is evaluating the performance of its startups based essentially on their net profit.

Figure 21 BIC UMBRIE (see online version for colours)

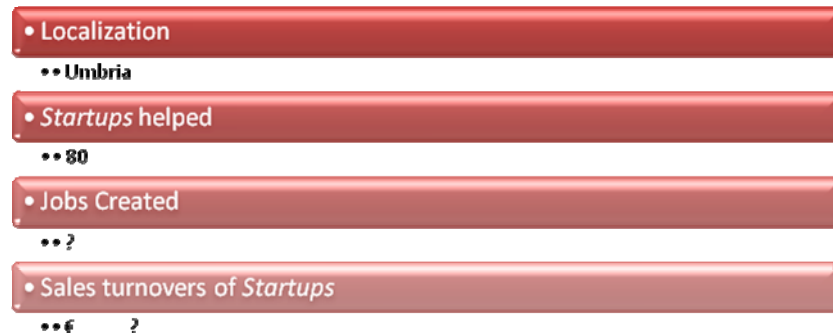
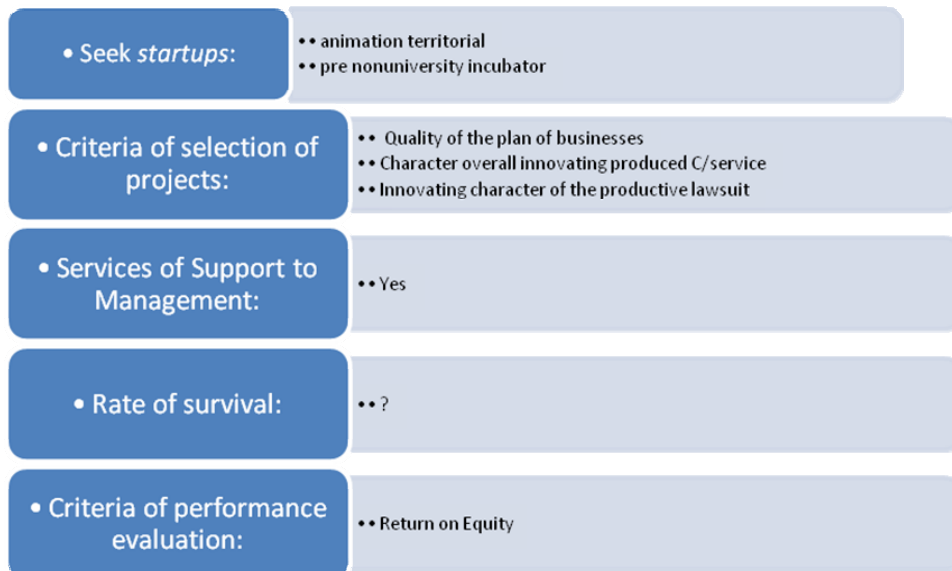


Figure 22 BIC UMBRIE details (see online version for colours)



6.3 BIC UMBRIA

The BIC UMBRIA is an incubator located in Umbria, which has already helped 80 startups. To attract startups, they have a very important relationship with a pre-incubator non-university and they also develop territorial animation activities, which means, actions to promote entrepreneurship. The business plan projects have been made in 75 days, on average. The BIC UMBRIA helps entrepreneurs to contact the banks to finance their projects.

To select the projects, BIC focuses on innovation and on the quality of the business plan. To assess the performance of the startups this BIC uses mainly return on equity.

Figure 23 University of Perugia, Umbrie (see online version for colours)

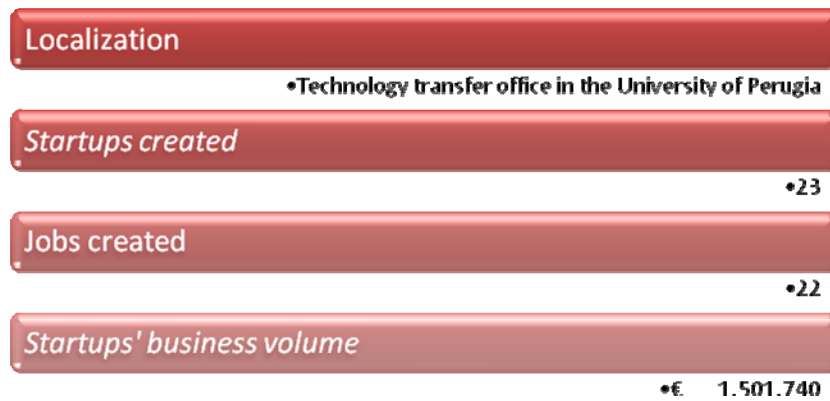


Figure 24 University of Perugia details (see online version for colours)

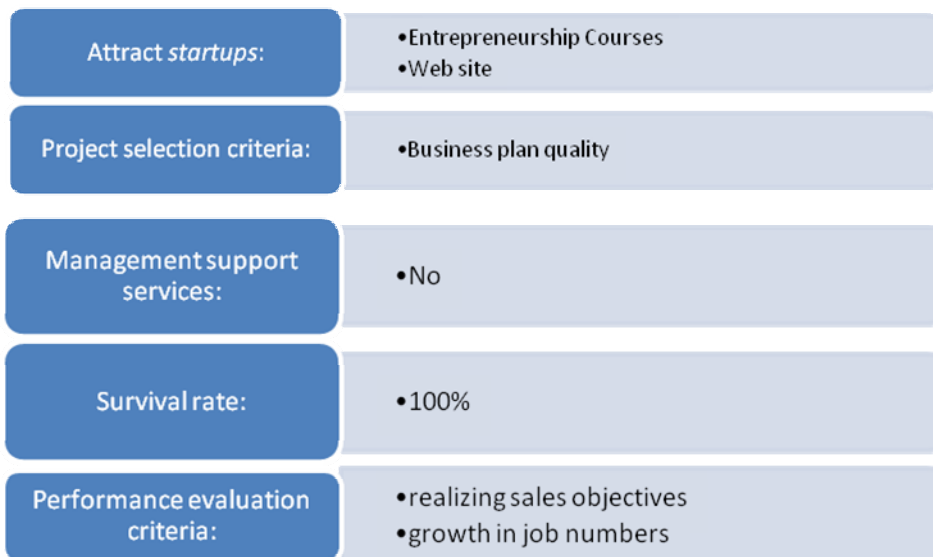


Figure 25 BIC NERA, Algarve (see online version for colours)

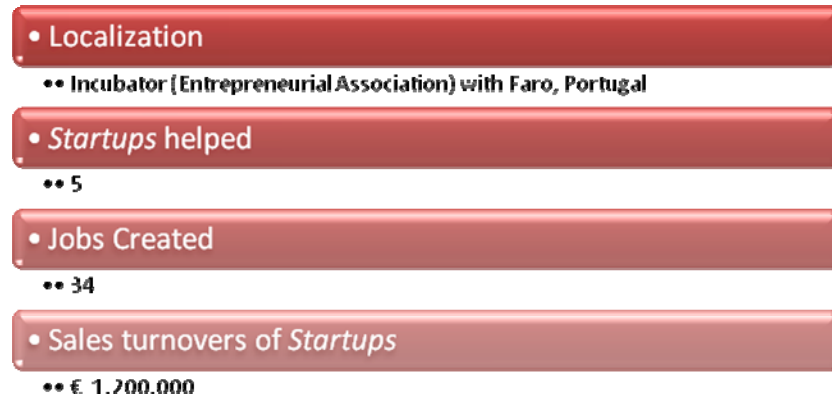
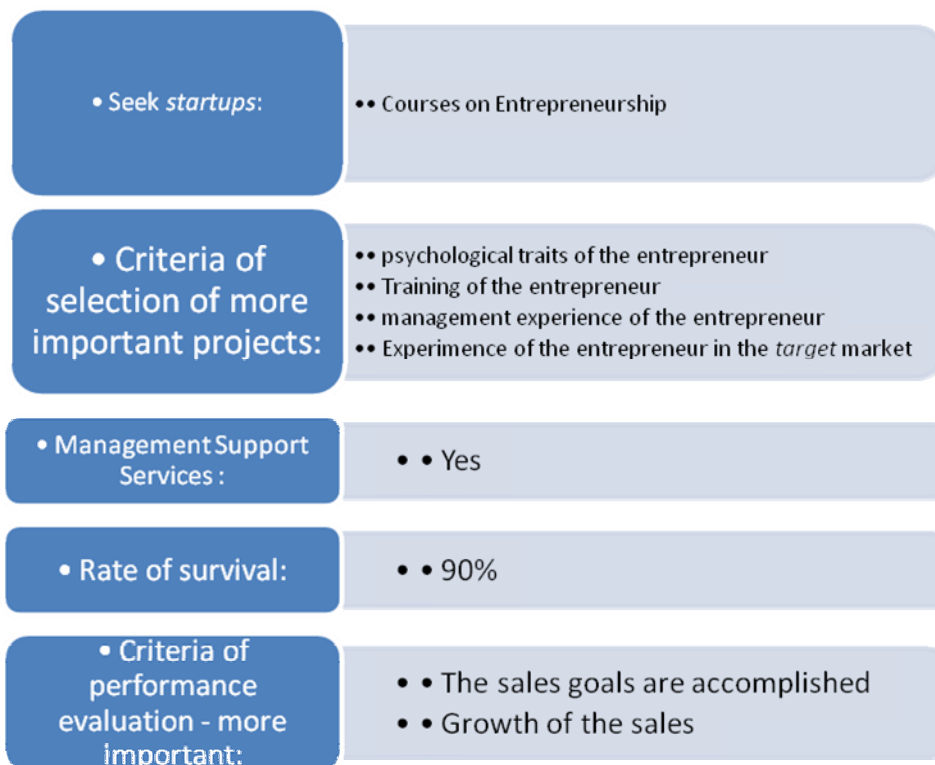


Figure 26 BIC NERA details (see online version for colours)



6.4 University of Perugia

The University of Perugia has a technology transfer centre who already contributed for the creation of 23 startups, in the last five years. To attract projects, the University of Perugia organises courses in entrepreneurship and also uses its website. The University of

Perugia takes part in the design of the projects and the business plans are made in an average of 120 days, a little more than in the other case studies. The principal project selection criterion is the quality of the business plan.

The University of Perugia does not provide support management services. 100% of the startups have survived. The principal startup evaluation criteria are the capacity to reach the sales goals and the growth in the number of employees.

6.5 BIC NERA – Associação Empresarial da Região do Algarve

The NERA is an entrepreneurial association that runs an incubator in the city of Faro, the capital of the Algarve. The incubator has already helped five startups and survival is 90%. The NERA is the only TIS in this research that has made contributions to the original idea of projects. The business plans have been made in an average of 90 days. The NERA helps entrepreneurs to contact the banks to finance their projects. To attract projects, NERA offers courses of entrepreneurship. The selection of projects is made focusing on human capital of the entrepreneur.

The evaluation of the performance of startups is made primarily with an assessment of sales.

6.6 IEFPP – CACE Algarve

CACE Algarve is an incubator of IEFPP, located in Loulé. Fifteen startups have already been created at CACE Algarve. To attract startups, CACE Algarve uses advertising on television and in posters and brochures. The CACE Algarve also makes divulgation sessions in schools, universities and incubated businesses. The business plans have been made in 35 days, on average. The selection of projects is made with more attention to their innovative nature, to the market potential, to the human capital of the entrepreneur and to the quality of the original business plan.

The evaluation of the performance of startups is made with special attention to its profit. The incubator provides management support services to the startups and the survival rate is very high (90%).

Figure 27 CACE, Algarve (see online version for colours)

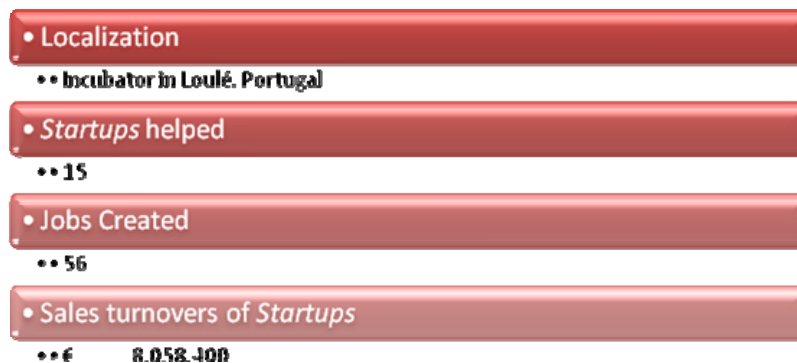
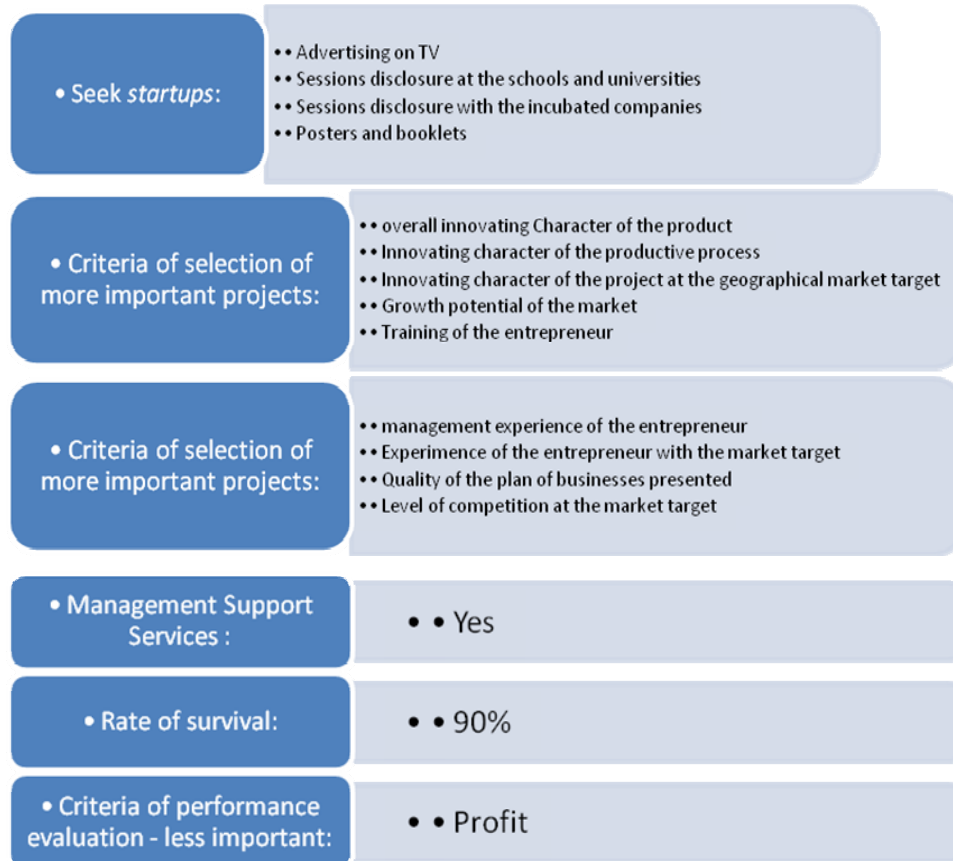


Figure 28 CACE details (see online version for colours)



6.7 BIC ME – Sicilia

BIC ME is an incubator, located in Sicilia, and a part on the EBIC network. They were not able to specify how many startups have already been created at BIC ME. To attract startups, BIC ME uses mainly advertising on television. The BIC ME did not help entrepreneurs design their business plans. The selection of projects is made with more attention to their innovative nature, to the experience of the entrepreneur and to the quality of the original business plan.

The evaluation of the performance of startups is made with special attention to its return on investment, gross profit and sales and market share growth. The incubator provides management support services to the startups and the survival rate is very high (100%).

Figure 29 BIC ME, Sicilia (see online version for colours)

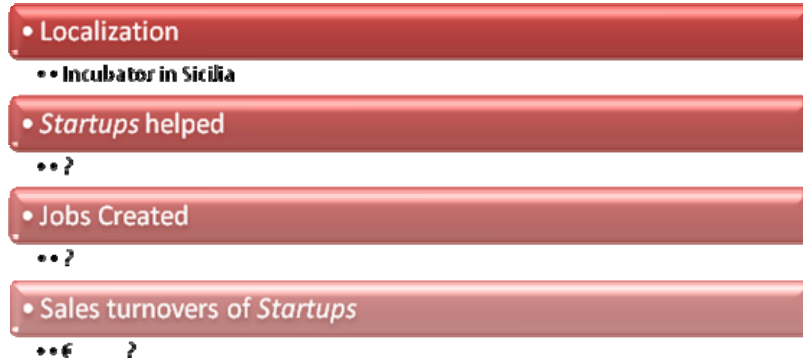


Figure 30 BIC ME details (see online version for colours)

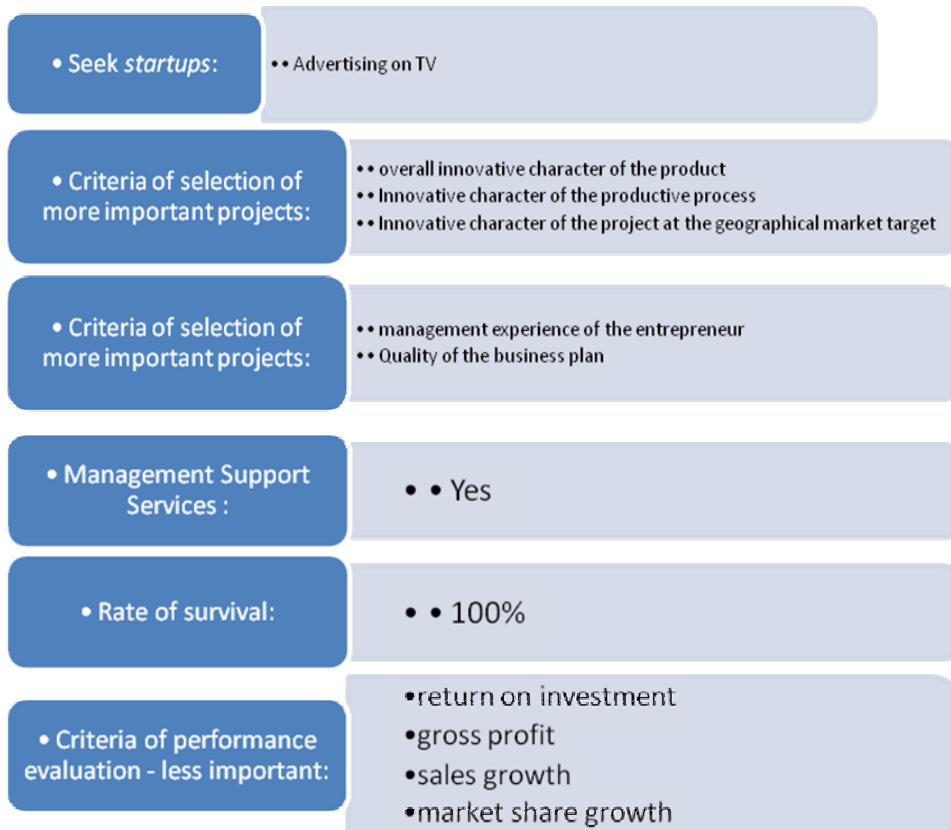


Figure 31 PST, Sicilia (see online version for colours)

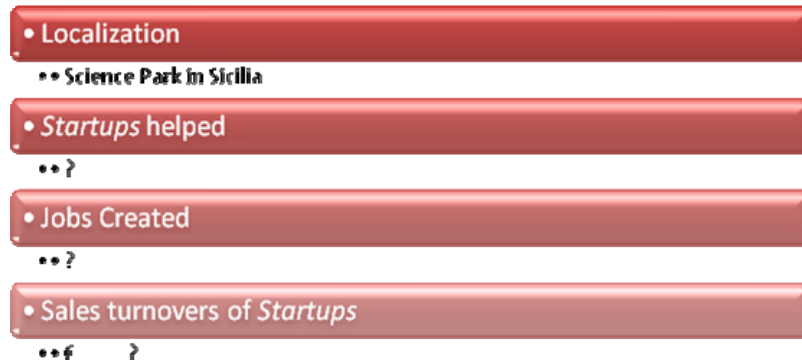
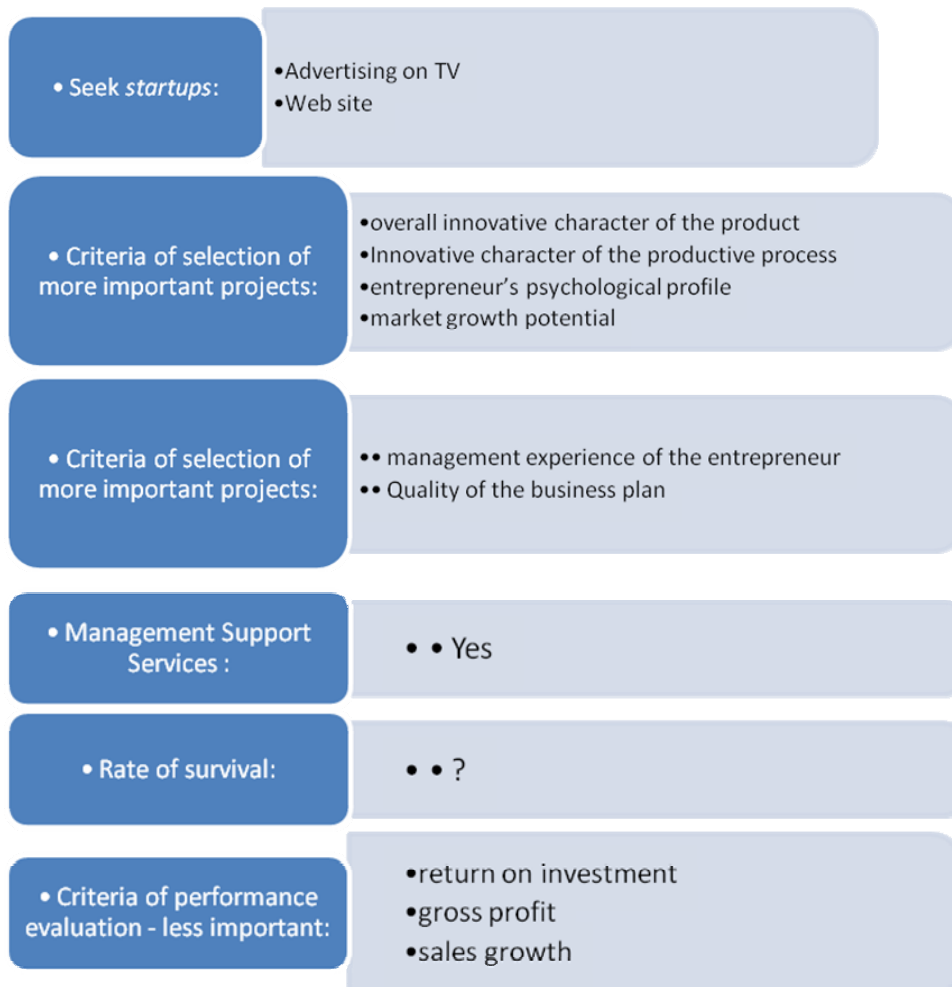


Figure 32 PST details (see online version for colours)



6.8 *PST – Parco Scientifico e Tecnologico della Sicilia*

PST is a science park, located in five specialised poles, all in Sicily. They were not able to specify how many startups have already been created at PST. To attract startups, PST uses mainly advertising on television and its website. The PST did not help entrepreneurs design their business plans. The selection of projects is made with more attention to their innovative nature, to the entrepreneur's psychological profile, to the market growth potential, to the experience of the entrepreneur and to the quality of the original business plan.

The evaluation of the performance of startups is made with special attention to its return on investment, gross profit and sales growth. The incubator provides management support services to the startups and the survival rate is unknown.

In analysing these case studies, it can be said that the strategies used to attract projects are different without much in common. The selection of projects is made with different criteria, but there is a special attention to innovation and to the entrepreneurs' human capital. Most technology interface structures, analysed in these cases, provide support services to management. The strategies used and the selection criteria result in a very high survival rate (75 to 100%), but the analysis of the performance of startups is made with very different criteria. The five cases studied show success strategies used by different Technopolis regions. One can learn with all, but the main conclusion is that there are different roads to arrive at success and it is possible to choose the path best suited to each region.

7 Discussion and conclusions

For the moment, it is possible to conclude that these four MEDOCC regions have characteristics very diverse in their economic and social fabric. In any case, the cleavage between Umbria and the other three regions is clear, and it also seems clear that its Mediterranean traits are not as deep as in the other regions.

Regarding the knowledge economy and its future development in the four regions, ideas are much closer. By the way, the technology interface structures that already exist in such regions are in similar numbers.

Of course there is the exception of Umbria. It opposes its model of 'technological districts' to the solutions tried by other countries and regions in Europe. In any case, this opposition is more apparent than real, given that the new generation of 'technopolis' is sufficiently comprehensive to include imaginative and valid solutions as those of Umbria.

One of the ambitions of the project MED Technopolis is precisely to serve as an experimental basis for the consolidation of ideas and models of the new generation of interface structures such as 'technopolis' or 'poles of competitiveness'.

Technology interface structures in the Technopolis regions use very different strategies to attract projects, to select projects and to assess startups' performance, but apparently that does not reduce the success of all TIS studied in this research, with a very high survival rates for the young companies created with their support.

For the future, the Project Med Techopolis must use the examples of success to develop a network of technology interface structures capable of contributing to local development with good strategies.

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