



## Pilot Action Plan

**Implementing region: Catalonia**

*Valorisation of technologies: Market Intelligent Unit*

**Executive Summary - March 2008**

<b>Main objective</b>	Transfer technology and valorisation unit
<b>Main activities</b>	<ul style="list-style-type: none"> <li>- follow-up of the technological novelties</li> <li>- evaluation of emergent technologies</li> <li>- Knowledge of the business reality</li> <li>- Analysis of the market tendencies</li> <li>- Methodologies for valuing technologies</li> <li>- Prototype</li> <li>- Business plan definition</li> </ul>
<b>Expected results and outcomes</b>	Global service of technology transfer and valorisation of technologies, knowledge market place with the capacity of transfer new technologies, multiplier effect promoting innovation as a key for be competitive, getting more funds for high technology risk projects and business dinamisation
<b>Direct and indirect beneficiaries</b>	SMEs, universities, Technology parks, Technology centres, and other private or public actors.
<b>Implementing organisation</b>	Leitat Technology Centre and Barcelona Chamber of Commerce
<b>Partner(s)</b>	No more partners
<b>Duration</b>	For the pilot project plan only 1 year
<b>Estimated budget</b>	For 2008, 1.500.000 euros

# 1. Problem identification

## 1.1. Introduction

Catalonia has a very complex system of actors and networks implementing in the field of support to innovation and intermediation. Initially, some of the structures of the Catalan S&T system were designed following a sector based logic. It was thought that every key sector of the economy had its own dynamics and needs and that a specific focus was the best option. Nevertheless, the loss of competitiveness in Catalan economy during the 90's and the changes in the global economy introduced a change on this mentality. The integrate approach was necessary; that integrated focus wasn't just concerning the multisectorality of the main institutions. It had to link also the pure technological research and development with a better link to the needs and markets through a more efficient platform.

	Strong points		Weak points	
	S&T intermediaries	SMEs	S&T intermediaries	SMEs
<i>S&amp;T intermediation organizational capabilities (budget, human resources etc.)</i>	<ul style="list-style-type: none"> <li>- growing specialization</li> <li>- growing budgetary dedication</li> <li>- internal training to technicians</li> <li>- increasing private and external funding</li> </ul>	<ul style="list-style-type: none"> <li>- professional service</li> <li>- clear definition of objectives</li> <li>- well trained experts and technicians</li> </ul>	<ul style="list-style-type: none"> <li>- need of higher external training</li> <li>- need of major dedication to S&amp;T in budgetary terms</li> <li>- need to simplify procedures</li> </ul>	<ul style="list-style-type: none"> <li>- lack of internal departments</li> <li>- low budgetary dedication</li> <li>- need of internal training</li> <li>- need of integrating schemes university-business</li> </ul>
<i>Service areas and services delivered</i>	<ul style="list-style-type: none"> <li>- wide range of activities</li> <li>- good quality of services in general</li> <li>- growing specialization in areas</li> </ul>	<ul style="list-style-type: none"> <li>- good quality of services offered</li> <li>- successful participations on programs and projects</li> <li>- successful rate of innovation measures when implemented</li> </ul>	<ul style="list-style-type: none"> <li>- need to specialize better on some fields</li> <li>- need to fill the gaps on the offer of some services and areas</li> <li>- need to disseminate better the offer through better channels</li> </ul>	<ul style="list-style-type: none"> <li>- overcrowded number of services and actors</li> <li>- bureaucracy</li> <li>- lack of time</li> <li>- lack of resources</li> </ul>
<i>Connections between different organisations in the system</i>	<ul style="list-style-type: none"> <li>- effort in networking</li> <li>- growing importance of integrated approach research-business</li> </ul>	<ul style="list-style-type: none"> <li>- good coordination of some actors</li> <li>- good follow-up of initiatives and measures</li> <li>- increasing interaction of actors</li> </ul>	<ul style="list-style-type: none"> <li>- need to simplify structures of support</li> <li>- increase competence in between actors towards better effectiveness</li> <li>- less politically motivated designs</li> </ul>	<ul style="list-style-type: none"> <li>- too many actors on the field</li> <li>- role of Universities</li> <li>- difficulty to understand some measures and competences</li> </ul>

## 1.2. Pilot project focus

The Catalonian economy is in general under a process of redefinition of its whole production model, due to the continuous loss of productivity produced in last years. Changing the patterns that have been ruling the economy for such a long time will require a strong political compromise and an expert guidance, with the compulsory participation and commitment of all the actors. All social and economical actors in the region have settled the first step with the signature of a general agreement in order to push a strategy change globally. Still, there are very big gaps to cross before Catalonia can face the Lisbon objectives with warranties.

First of all, there is a lack of adequate infrastructures in the region, which are conditioning the human and capital movement. The Spanish central government is working in an infrastructure plan that aims to adjust the reality of the needs of the region in such strategic fields (airports, roadways, railway structure,).

There is also a decrease in the private expenditure on R+D activities, while the public expenditure is growing. The SME based economy, and mainly, a very deep lack of collaboration and cooperation mentality in between Catalonian SMEs is at very bottom of this problem.

On the other hand, instead of introducing new technology intensive processes, Catalonian SMEs are perpetuating their growth model based on very intensive work labour, low salaries and lack of intensive indoor training processes, taking advantage of the phenomenon of the massive immigration. This model has shown its debilities and is starting to seriously affect Catalonian economic productivity.

Finally, another conclusion we can extract from the information given by the SMEs and the analysis of the intermediary system is the existing gap in between University and Business in the region. All the efforts done so far to compensate this gap have been clearly insufficient. The need of a University investigating for the business needs is a big issue at the moment in the region, and the multiple policies and tools introduced to compensate this point are not being as successful as political powers are trying to show. Industry reclaims a more efficient University, not just in terms of R+D, but also in terms of adjusting the educational programmes and curriculum's to the business needs.

Taking in consideration the results from the questionnaires we suggested in our previous reports two main topics to be treated and analyzed during the peer review and study visits: IPR tools, Support to innovative start-ups and spin-offs and Clustering and Networking.

Concerning IPR, it is becoming more and more strategic to position our region in a field that is exploding worldwide and in which Catalonia and Spain have very little presence. As we said on previous pages, the actual main tool of IPR, patents, is not well developed at a national and regional level. Spain represents the 1% of registered patents in 2005 by the whole of EU, though Catalonia represented a 30% of the national total. It is a proven fact that almost a 70% of filings are originated by SMEs and small entities, and considering that patents attract venture capital investors (another field in which Catalonia has a big handicap).

Patents are seen more and more as there is a progressive shift in the focus from intangible to tangible assets. We need to analyze our own system of support in this area and study what other leading regions are doing in order to generate a good basis from which disseminate the information and improve our situation as a region.

About policies and tools of support to innovative start-ups and spin-offs, it's obvious that is one of the key factors of the success of any S&T system, as successful spin-offs and spin-outs represent one of the most direct ways to link Science and Business, and a clear indicator of how things are being done globally in the region. We know that the actual rate of success of these companies is average, but the number of new spin-offs and outs is still not satisfactory. The numbers offered by CIDEM about the creation of spin-offs and outs, considering the focus of the Technological Springboard Network on the field, are positive but not very large. Our aim would be to collect as much information as possible about the state of the art in our own region, listing all the institutions that work on the field and under which conditions the new companies are created, and compare it with other regions to check the viability of different models.

## 2. Pilot action specification

The current competitive context is defined by four main factors, i.e. continuous technological (specially linked to the ICTs), shorter product life cycles, increasingly demanding consumers competition. Within this context, the advanced economies are increasingly becoming what is economies' which, in turn, has reinforced a growing consensus on the key role that human capital sustaining economic growth and enterprises' competitiveness.

Having this in mind, enterprises in general and SMEs in particular are increasingly aware of key words such as 'knowledge', 'skills' or 'competencies' for assuring their competitiveness.

Enterprises are at the heart of the strategy launched by the European Council in Lisbon in March 2000. Reaching the objective of becoming the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth, creating more and better jobs, and developing greater social cohesion will ultimately depend on the success of enterprises, especially small- and medium-sized ones.

National public authorities are developing a range of different policy measures intended to upgrade national SMEs' competence base. These measures include support for formal training, access to external consultancy services or empowering methods to management and organisational innovation. It is also possible to identify an increasing emphasis on the introduction of the so-called 'competence-based training', involving the recognition of knowledge and skills acquired through practical experience.

The main objective of this plan is to promote a Catalan technology market fostering the **valorisation and commercialization** of the R+D within the collaboration of the public and private sectors creating an organisation focussed to the valorisation and transfer of technology

As have been appointed in the previous reports there is a gap between the technology transfer process and the innovation generated by the market.

### 2.1. Objective and purpose

The main purpose of this plan is to get a systematic detection system of emergent technologies suitable of being commercialized immediately (selling the technology, via a licence or creating a technology base company), or valuing this technology through applied research teams capable of convert these new possibilities in commercial products.

This general goal can be divided into several specific objectives:

- Creation of a unit focus to valuing and technology transfer, matching the demand and the offer of technologies
- Global market orientation
- Foster the relations between the main innovation actors of the Catalan R+D+i system.

### 2.2. Approach: tools and methods

The most important thing is to detect technology opportunities and information sources that allow getting to a wide number of technology opportunities due to the fact that, normally SMEs do not have the capacity and/or information sources to get to this information.

The proposed methodology is benchmarking in order to detect emergent technologies and valuing them with the objective of introducing them in the best way into the market.

The benchmarking is a management tool through which a plan for evaluation, measurement, and improvement is implemented. The insurance entity can use this tool to analyze market trends, measure sales performance, measure market penetration, and measure product performance.

Market intelligence is in relation with the strategic analysis of the new scientific and technological novelty (offer) and the business environment and reality (demand). This matching will cover the following areas:

- follow-up of the technological novelties
- evaluation of emergent technologies
- Knowledge of the business reality
- Analysis of the market tendencies
- Methodologies for valuing technologies
- Prototype
- Business plan definition

### 2.3. Target groups and beneficiaries

The target groups for this pilot project plan are: SMEs, universities, technology centres, technology parks.

## 2.4. Implementing body and partnership

The implementation bodies are going to be: Leitat Technological Centre and Barcelona Chamber of Commerce.

Barcelona Chamber of Commerce is one of the most representative institutions of the Catalonia. It plays a dynamic role in helping companies to start up, develop, internationalise and innovate. Its activities are focused on prospecting and activating the economic and business sector, supporting national and international companies, offer products and services to companies (such as specialized technical assistance or internal training) and a global aim to contribute in the expansion of the economical and entrepreneurial axis of the region supporting SMEs mainly.

The 5 main axis of activity of Barcelona Chamber of Commerce are:

- Training: over 2,500 people trained every year following the Chamber's Programmes, including training programmes for managers and executives.
- Internationalisation: including support services for export, commercial missions abroad, international information and assessment and technical support.
- General information for companies, such as commercial reports and companies database.
- Technical specialized assessment in fields like Intellectual Property, Quality Management, IST, Innovation Management, Knowledge management, Management of external funding...
- Support in creation of new companies.

**LEITAT Technological Centre**, located at Terrassa and member of the Generalitat Network of Techno Centres (XCT). Though it started as a textile centre, offering its services to the local companies, at the moment has diversified its fields of activity and its geographical impact, working with companies all over Spain and Europe. At the moment, LEITAT offers a wide range of activities like:

- Projects: R+D+I projects to support the increase of competitiveness of the companies involved, nationally and internationally, increasing also the innovative capability from the disposal and application of advanced technologies.
- Consultancy: answering the client's needs with efficiency studies, adjusting their products to the new needs of markets and determining the quality of their production and the accomplishment of the diverse regulations.
- Training: specialized training to support the diverse entrepreneurial areas of textile sector, and oriented to the acquisition of all types of high competences at a practical level.
- European Ecological Label: first company in Spain acknowledged as official collaborator of the Environment Department in the field of assessment, testing and analysis for obtaining the Label
- Testing of physical and chemical parameters of textile products
- Special testing of advanced materials
- Technical support office: offering specialized support and elaborating technical reports on applied legislation, development and assessment in projects and external collaborations.

## 2.5. Policy context

In Catalonia, exists a similar tool the Technology springboards that besides gaining new projects and assess them to turn them into companies, include also a series of initiatives such as: university courses on how to create your own company, former students' reunions to share experiences about the creation of enterprises, contests of business plans, etc.

The Network of Technological Springboards (TT Network) is made up of 10 units located at the universities and Catalan business schools which offer entrepreneurship services.

The aim of the TT Network is to increase the transfer of technology between universities and enterprises through the creation of technology-based companies and the transfer of industrial intellectual property. This is an initiative of the CIDEM (Ministry of Innovation, Universities and enterprise) together with the following Catalan Universities: Universitat Autònoma de Barcelona, University of Barcelona, University of Girona, University of Lleida, Technical University of Catalonia (UPC), Universitat Pompeu Fabra, Universitat Ramon Llull (ESADE and La Salle) and IESE.

In six years, the network has gone from having 6 centres to now having 10 that work in the field of Catalan Universities' entrepreneurship, boosting the creation of technology-based enterprises and the creation of industrial intellectual property in companies.

The TT Network was born six years ago as an initiative of the CIDEM and with the support of most of the Catalan universities. Nowadays, 9 universities which give continuous support to entrepreneurs are members of the Network.

For the pilot project plan it is foreseen to collaborate with this Network of Springboards.

## 2.6. Monitoring and evaluation system

The indicators pre-defined for evaluating the project are:

- The number of staff members with increased capacity (awareness / knowledge / skills) resulting from the exchange of experience at interregional events.
- The number of regional/local policies and instruments addressed in the field tackled by the project
- The average number of visits per month on operation's website
- Number of collaborations with universities
- Number of collaborations with technology centres
- Number of collaborations with SMEs
- Number of business plans generated
- Number of novelties
- Number of prototypes
- ...

## 3. Duration and detailed action plan

**Table 1. Pilot action organisation**

2008	Month												
Activity	1	2	3	4	5	6	7	8	9	10	11	12	Implementing body
Management activities	Yellow												Leitat, Barcelona Chamber of Commerce
Start-up of the project	Yellow				Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Leitat, Barcelona Chamber of Commerce
Services preparation	Yellow												Leitat, Barcelona Chamber of Commerce
Promotional activities	Yellow												Leitat, Barcelona Chamber of Commerce

#### 4. Management and human resources

The objective is to promote the creation of new job opportunities of high added value (degrees and special qualifications within an international vocation).

It is foreseen to develop professional profiles capable on focussing their activity on acquisition and production of technology.

It is essential for this project to promote the professional training and to keep the know how of the employees.

This project will promote the professional careers, management of scientific talent, technicians and technologist through: special trainings, international visits, exchange of professionals with other organizations, international missions to the main centres of knowledge and technology.

#### 5. Budget and sustainability

##### 5.1. Budget

<b>2008</b>	<b>Human Resources</b>	<b>Equipment &amp; Supplies</b>	<b>Travel</b>	<b>Other (office etc)</b>
	200000	86000	20000	15000
			<b>TOTAL</b>	<b>= 321000</b>

##### 5.2. Sources of funding

It is foreseen to finance the project with funding from the Catalan government and the European investment Fund. Nevertheless for 2008 it is planned 100% inversion from Leitat and Barcelona Chamber of Commerce.

#### 6. Dissemination

The project will provide an Internet website as an easy access to all information concerning the objectives, main activities and results of the project.

Intellectual property rights will be owned by the Transfer Technology Unit , and will be open to all the participants.. Financial details will be incorporated in each individual case.

Some reports resulting from the project will be published on the Internet platform of the project in English language. Abstracts of these reports will be published in the relevant journals of the sector.

Additionally, the results of the project will be presented in several conferences.

The most relevant reports will be presented to the relevant European ,national and regional standardisation committees mainly by the numerous consortium members involved in the project. Furthermore the experts in the relevant European, national or regional standardisation committees will be invited to attend a conference, organised by Leitat and Barcelona Chamber of Commerce, where they will be presented the project's results and they will have the opportunity to discuss the potential impact of these results on standardisation with the involved project partners.

## **7. Sustainability and follow on**

The management of this project will follow business criteria's, searching the economic sustainability of the project in a maximum of 3-4 years.