Technology transfer is a learning process, whereby scientific and technical practical knowledge is passed from one party to another. To talk about a company’s ability to “learn”, refers to its ability to identify, assimilate and exploit existing technological (or innovative) knowledge about processes and products which are new to the firm. Without this ability within a company, there can be no transfer of knowledge. PAXIS validation projects and Areas of Excellence have been looking at this important factor.

Technology (or knowledge) acquisition is generally a demand-led process in which the transfer of innovative know-how, and physical proximity of the source of the technology are seen as critical factors for success. Liaison offices in academic and research organisations, and validation projects have demonstrated to be useful instruments to foster the identification and validation of good practices in transfer of knowledge activities. Barriers between performers of research in the public sector and those who take up the result in the private sector should be overcome by the new policy goal of ‘improving the research/industry interface’. Public innovation policies can promote technology transfer by:

• Adapting the rules for the dissemination of research results from publicly-funded research (licensing, access to the latest knowledge, etc), to encourage exploitation and transfer of results so as to foster innovation
• Encouraging universities to give particular attention, in addition to the traditional missions of education and research, to promotion of the diffusion of knowledge and technologies
• Encouraging large public research facilities to benchmark their activities in technology transfer and partnership with enterprises

The European dimension

Fostering the adoption of new technology or knowledge by new users in the sectors and regions where these technologies are not yet used, is one of the aims of the Community policies. Challenges on innovation matters for the forthcoming years include supporting knowledge transfer activities towards Newly Access Countries (NACs) or even other geographical environments (e.g. Mediterranean Countries). For these cases the importance of the knowledge content is less pronounced and main difficulties arise from differences on social parameters (culture, institutional set-ups, legal framework, etc.). The main challenge is to bridge these cultural gaps. At Community level, the Commission

• Supports the identification and promotion of good practices and, where appropriate, formulate rules for adapting existing regulatory environments to make them more favourable for innovation.
• Assists European universities and public research centres to set up instruments (networks, associations) to promote knowledge diffusion and best practices in technology transfer.

Spinning-off university results

PAXIS concentrates, among other activities, on the validation of new approaches and methodologies of transfer of knowledge developed in universities, in order to contribute to the formulation of adequate policies and to solve the lack of market experience.

University-industry collaboration has been traditionally weak in Europe. Few vigorous institutional links were fashioned to bridge the world of science and technology and the world of trade and markets. It is clear that industry is becoming more science-based and knowledge-driven, and that collaboration between fundamental researchers in universities and applied researchers in industry is the engine of today’s innovation and competitiveness. The problems of modern high-tech industry require the combined expertise and power of many disciplines and a well-functioning transfer of university knowledge to industry to yield practical results. Methodological approaches of transfer are different from one university to another, being the number of created start-up firms (spin-offs) a clear indicator of the success of concerned approaches. Some of the PAXIS projects deal with the validation of new approaches used by European universities, assessing the main factors that affect the success of the mechanisms of knowledge transfer.
NEW WAYS TO CREATE UNIVERSITY SPIN-OFFS

The PAXIS projects, QUASI-E, SPINNOVA and USINE have experimented and come up with a range of successful concepts for creating university spin-offs. The projects take advantage of high quality scientific equipment and research results in universities and build on areas such as administrative support, training and innovation tools. The projects provide an infrastructure for university research groups through technology transfer and pre-incubator concepts that detect business opportunities and create university spin-offs.

SPINNOVA
Stimulating spin-offs and technology transfers

SPINNOVA is a new methodology that stimulates academic researchers to create spin-offs and contribute to innovation through technology transfers. The project provides best practice training, implementation and advice tools based on the experience of different European universities.

The SPINNOVA project is organised by a consortium of seven European universities (Dortmund, Louven, Münster, Nijmegen, Osnabrück, Salamanca and Trento) that develop new tools to support the commercialisation of academic research results. The key components are research-customised training combined with web-based advice and support.

The training is specifically designed for researchers at universities or research centres, with a focus on a ‘doing-by-learning’ approach. The tool extends the traditional academic skills concerning ‘teaching’ and ‘learning’ to ‘technology transfer’. Participants develop their own exploitation plan that describes how their research results will be commercialised. Two methods of commercialisation are utilised:

- Exploitation by transferring ‘know-how’ & technologies to existing companies
- Exploitation by setting up new companies.

The SPINNOVA web-based tool supports technology transfer implementation on a ‘multi-cultural’ level. It provides local, regional and international information to researchers on best practices, implementation guides and contact persons. In the future the web-based tool will be made available to all European Universities and research centres.

Converting researchers into entrepreneurs

There are currently 18 selected university researchers participating in the project. Once they have developed their individual exploitation plan, they have the opportunity to present it to a user-group consisting of venture capitalists, experienced spin-off entrepreneurs and innovation experts. This provides the participants with a valuable ‘testing-ground’ for their commercialisation plans. Through this approach, SPINNOVA is expected to yield 1 to 2 spin-offs in the short-term and 3 to 4 in the long-term. The feedback from the user-group is also used to fine-tune the training programme and update the web-tool to guide other researchers in their commercialisation process.

www.spinova.org

QUASI-E
A new southern European model for setting up innovative firms through technology transfer

The QUASI-E project is lead by the Spanish Bosch I Gimpera Foundation (University of Barcelona) and with two other partners, the Italian Arena Science Park (University of Trieste) and Tecnimho in Portugal (University of Minho).

The QUASI-E project is about the fact that the research group keep their legal condition as academic personnel, but work like an enterprise. A research group becomes a Quasi-Enterprise by incorporating the full-time support services of a promoter, who is responsible for research, promotion and administrative management activities. Quasi-Enterprises also benefit from general facilities (offices, meeting rooms, auditorium and common administrative services) offered by the programme and located in the innovation centre.

A look into the future

The QUASI-E partners feel that the project is adaptable to other European universities and science parks. The partners are now following measures to contribute to a wider dissemination of the project through:

- Preparation of a working manual to implement QUASI-E in a new scenario
- Organisation of three workshops in Barcelona, Trieste and Oporto
- Presentation of QUASI-E to other science parks and universities.

The QUASI-E approach has had a very good response in all partner countries’ support. Monserrat Rubí, from the Spanish Bosch I Gimpera Foundation. “We have set up thirteen new Quasi-Enterprises in Spain that are now fully operative and these groups have already created three new enterprises. QUASI-E in Italy has also set up five new enterprises and there are four new projects in Portugal. The turn over in the research groups has increased significantly and more contact has developed between the different university research groups.”

www.usine.uni-bonn.de

Becoming an entrepreneur for a trial period

The USINE concept

Does my product really sell? Among many of the questions about starting one’s own business, this is probably the one that is most crucial for the majority of would-be spin-offs from universities. A unique concept to answer this question is being developed by the USINE consortium. Based on the so-called Pre-Incubator model created by the University of Bonn, the USINE project coordinator. “Through this approach, the future entrepreneurs have the opportunity to test the reality of their businesses with a minimal amount of risk”. As a sales platform, start-up projects using this company environment are operated as independent profit centres within the legal and administrative framework provided by the pre-incubator. The business transactions are covered by a special insurance that reduces the financial risks for the profit centres.

“Pre-incubator model has proved to be successful; it transfers academic business ideas into entrepreneurs and research results into potential spin-offs”, says Bernhard Löffler, the USINE project coordinator. “Through this approach, the future entrepreneurs have the opportunity to test the reality of their businesses with a minimal amount of risk”. As a sales platform, start-up projects using this company environment are operated as independent profit centres within the legal and administrative framework provided by the pre-incubator. The business transactions are covered by a special insurance that reduces the financial risks for the profit centres.

The USINE concept is being transferred to Ecole Polytechnique Paris, Strathclyde, Valencia Polytechnic, Warsaw and the Dimotech company. Through their model, the consortium intends to close the important gap between university research and starting up a company.

Transferring pre-incubator model

The USINE concept is being transferred to Ecole Polytechnique Paris, and Universidad Politécnica de Valencia; in order to find out about the potential of this approach in different cultural and legal settings. The core model has been extracted and will be adapted to the regional needs of the respective partners.

In the future, USINE aims to spread this successful approach throughout Europe. In order to achieve this goal, USINE will provide manuals and support schemes to EuroConsult; Bielefeld, Pamplona (BCI); Polytechnique Paris, Strathclyde, Valencia Polytechnic, Warsaw and the Dimotech company. Through their model, the consortium intends to close the important gap between university research and starting up a company.

www.usine.uni-bonn.de
SPRING

SPRING stands for "Speed-up of Regional Innovation and economic Growth" and the four partners in the network have come together for precisely that reason.

Each felt, as a recognised "Region of Excellence", that it had much to offer as well as much to learn from each other, particularly in how to stimulate and support new technology-based business ventures and start-ups, which in turn generate tangible assets, economic growth and prosperity.

Each Partner wanted to invest in success wherever it was found and each have taken the lead on a key thematic area:

• STOCKHOLM – Intellectual Capital
• MADRID – Entrepreneurship
• STUTTGART – Early Stage Financing
• GREATER CAMBRIDGE – Spreading an Innovation Culture

Together with high value-added relationships being built up, a great deal of excellent innovative practice has already been captured in the Interim Report, which itself stands as an exciting and innovative document and a great deal is ongoing in each region to stimulate continued excellence.

Intellectual Capital (IC)

Knowledge has been recognised by innovative companies as one of the major driving forces to keep the lead. Companies in Sweden are now including intellectual assets in their balance sheet. It is more and more recognised that intangible assets are keys to the development also at the regional level.

The SPRING network wants to transfer the IC approach from company level to regional level to visualise and measure the knowledge assets of a region at two levels: Support systems and innovative companies. The aim is to create a knowledge base that can be used as a tool to support the vision and strategies adopted at regional level to achieve economic success.

Accounting for the IC of a region includes the intangible assets of individuals, teams, enterprises and public agencies as current and potential sources for growth and future wealth creation. Visualising and measuring the IC of a region consists of a number of basic steps:

• Define the vision for the region
• Define and agree upon the key success indicators
• Use chosen indicators to rank the region’s IC
• Finalise and communicate a report.

This process should be repeated with some intervals to identify changes concerning the region’s IC strength and weaknesses.

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Entrepreneurship

Dealing with Entrepreneurship, Madrid is carrying out a programme to support spin-off creation from research centres, higher education institutions, etc. so-called ‘Virtual Incubator for Spin-offs of the Community of Madrid’.

The VIVICM focuses on the creation of innovative companies, starting from the capabilities and research potential of public and private institutions, while at the same time encourages sustainable employment throughout the region of Madrid. VIVICM represents a virtual platform for spin-offs that offers support to both entrepreneurs and local investors, through the Community’s gateway for technological innovation.

The internet is its principal centre of activity through its Virtual Centre of Support for Innovation (VCSI).

The VCSI collects information on 10 000 researchers, 500 innovative Companies, 600 technical services and 300 PhDs. Furthermore, it provides high added value services in technology commercialisation and marketing, in fields such as company creation, internationalisation, technology audits, knowledge management, economic intelligence, fiscal issues or legal protection on research results.

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Early Stage Financing

Financing instruments for start-ups from universities and research institutes show a gap between (public) research funding and (private) risk capital at least in several European Countries. SPRING has analysed in detail the needs of all SPRING regions, based on a common questionnaire. Even if regional situations are different with respect to public activities in the seed phase support for start-ups, the equity gap is very similar. Tasks for future development have been identified and documented for innovation politics as well as private activities.

In a joint workshop between the two networks KREO and SPRING, conclusions were drawn as a basis for further development: existing solutions like the Universities of Cambridge Challenge Fund should be presented as “good practices”.

New models like the Technology Fund Southwest developed during the SPRING project take into account specific public-private partnership models to minimise the risk of investors in pre-seed and seed financing. A unique way of treating IPRs owned by universities in the investment process could be newly defined. A first closing of this new fund is planned for early 2002.

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Spreading an Innovation Culture

The East of England combines areas with a high intensity of innovation activity such as Greater Cambridge, with corresponding areas where little or no innovation or enterprise activity has taken place. A key challenge has been firstly to understand why this is so and then identify key practical steps to be taken to address these imbalances and actively spread a culture of innovation.

These include:
• promoting learning exchange and knowledge transfer;
• supporting networking amongst entrepreneurs and service providers;
• stimulating the provision of advice and support for start-ups and growing companies;
• pulling together regional and local financing streams from public provision, University Challenge Funds and private venture sources;
• developing facilities such as incubators from start-ups to maturity and providing opportunities for would-be and practising entrepreneurs to learn specific skills.

University of Cambridge Challenge Fund should be presented as ‘good practices’.

In addition, a series of themed events are taking place centred on areas in the East of England which are not currently considered to be “Hot Spots” for innovation and enterprise activity. Each event will bring together key actors from business support agencies and Chambers of Commerce, with individual entrepreneurs, SMEs, venture capitalists, patent lawyers and representatives from academic institutions, to share good practice and promote learning networks and knowledge transfer. A series of case studies will be one of the tangible outcomes from these events and again these will be made available via the PAXIS website.

A direct measure will be how increased capacity and performance in the East of England resulting from SPRING, is reflected in the next European Community Innovation Survey for the region.

Contact Paul Mudd: paulmudd@eveda.org.uk

We are currently collecting data on all these variables from each of the partner regions and the outcomes from this exercise will be featured on the PAXIS website.

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Contact Paul Mudd: paulmudd@eveda.org.uk

SPRING workshop in Stuttgart, February 2001
PAXIS projects validating successful methodologies for innovative start-ups

Simulation of SME start-ups in life science technology - STARTMED

STARTMED is a five-partner project held between universities in England (Nottingham University and Nottingham Trent University), Portugal (UNIF), and Holland (University of Maastricht and TIT). The aim of the project is to assess and stimulate models and approaches for fostering the start-up of new companies in the life sciences sector. In the definition phase of the project, the partners made a comparison between the three regions regarding the following aspects:

- Description of the life sciences cluster within the region
- Academic/industry spin-off leading to new ventures
- Settlement of foreign companies in the region
- Venture capital
- Regional and national policy in general

The next step is the implementation phase. The STARTMED partners will apply ‘best practice’ technology transfer packages to the regions and disseminate this information to entrepreneurs and start-ups. Particular emphasis will be placed on the ‘training concept’ whereby existing well-established companies will guard new life science companies. SMEs and entrepreneurs will have access to training modules covering various areas of expertise in the life science sector. A ‘seed fund’ will also be created that extends the possibilities of common venture capital schemes in the three regions.

ONLI (ON Line Innovation)

The ONLI project aims to link Technology Parks, Universities, and Technology Transfer Centres in a European virtual one-stop-shop network to provide on-line services related to Innovation Management, Technology Transfer, and Spin-off Support to European SMEs.

The main objective is to offer a variety of easily accessible telematic tools through which European SMEs can gain technology matches, training consulting, self-assessment tools and best practices. The web interface (already available at http://www.newventuretools.net) will enable the quick and uninterrupted services to three different client categories:

- Park personnel
- External consultants
- Direct use by SMEs

The innovation challenge of the project is to integrate a virtual network of four technology parks: Thessaloniki Tech Park (Greece), Oulu Tech Park (Finland), Tagus Tech Park (Portugal), and Ostfalen Tech Park (Germany) and two technology transfer organisations: URENIO research unit and Helicent Tech Transfer Centre (HTTC). Their services need to be available via the Internet and validated into six thematic areas. The services were adapted to the particularities and specific characteristics of each region. The project is divided into three stages:

1. Tool selection: Each partner is responsible for selecting tools in their thematic area.
2. Tool adaptation: The tools need to be adapted to each country.
3. Web-site preparation and design: Utilising tools to prepare each country’s interface.

Progress report

Tramantzas Costas, the project co-ordinator at Thessaloniki Technology Park said:

‘There has been a lot of progress with the ONLI project: The first two stages have already been completed and people have started to use the web interface. We believe that once the project is completed, even more SMEs will profit from the project.’

The programme preparations for the 3rd European Forum for Innovative Enterprises in Stockholm are well underway. The meetings and discussion held by the expert panel have resulted in an agreed outline of the programme. The updated programme outline can be found on the new Forum web site: www.thirdforum.org, which is being updated regularly (register your e-mail for automatic update notifications).

The main topics that will be debated at the conference will cover the following questions:

Change as business opportunity

How will the current economic developments influence start-up creation? How do market leaders react to change? How can changes become an opportunity? What do policy makers need to do? How can public policy provide incentives in times of change?

Academia as business generator

How can universities influence economic growth? What makes technology transfer from research to business possible? Can a successful researcher become a successful entrepreneur? Where are the successful models to be found? Can ‘local deal flow’ be enhanced?

Cities as business incubators

Can cities be incubators? What makes cities special business environments? Can successful models be identified from the experience of European cities? Does big stand for successful?

Many experts from Europe and overseas are expected to present their views and ideas under these key topics during the two days of workshops, round tables, debates and an exhibition. On Sunday and during the Monday morning leading up to the official conference opening, Stockholm will provide under the title ‘Testing Tomorrow’, special inside and hands-on demonstrations on its innovation systems and all its components.

All PAXIS members are busy preparing reports on best practice, progress and methodologies that were identified during the work that was carried out under this pilot action. These will be illustrated through the PAXIS exhibition and during a video presentation at the conference.

The ‘Award of Excellence for Innovative Regions’ will be presented to high-level representatives of European economic areas during the Gala Dinner at the Stockholm’s Nobel Peace Hall.

For updated information please register at the Forum web site: www.thirdforum.org
To register, please send an e-mail to: thirdforum@teamwork.fr

Development of methods and tools to support the creation of technology based innovation firms

The TECTRA project

TECTRA aims to support both existing SMEs and new start-ups to cope with the complexity of business innovation. The project will validate the practical implementation of decision-making and project management tools to support business creators. The new measures aim to construct and validate a self-assessment methodology so firms can take on decisions and develop management practices for:

1. Innovative diversification protects in SMEs
2. Spin-off development from research and development laboratories
3. Start-up launching and development phases

The TECTRA project, led by the Tekniker Foundation (Spain) and four other European technology partners: INASMET Technology Centre (Spain), SPRI Society (Spain), ESTIA School (France) and DONET Ltd Network (Finland), will supply the market with a complete set of tools and methods to support the creation of new technology-based businesses. This in turn will stimulate the creation of technology based innovative firms, improve their success rate and reinforce the existing ones. Finally, the technology-based firms will have a positive impact on society as a whole, through high growth and export rates, support for further technology developments and by improving the quality of employment.

www.thirdforum.org

www.newventuretools.net
The PAXIS pilot action
The European Commission developed PAXIS so as to take example from the experience of the Regions of Excellence and learn from the sophisticated policies that support their networking activities. This facilitates better documentation of policy decisions and the elaboration of solid measures, which enable regions to be more innovative and competitive, simultaneously transferring their expertise to other regions. Creation of new innovative enterprises, support of spin-off companies and development of start-ups are some of the main policy objectives in both the EU and worldwide. The rich European scientific base needs to be further explored and promoted so as to include European citizens’ welfare, developing new ideas for implementation. PAXIS aims to gather all these ideas and recommendations and through advanced networking and collaboration, make them prolific and accessible.

Starting negotiations for PAXIS 2

Tomas Botella and Charlotte Avarello, PAXIS Project Officers from DG Enterprise, on the first results of the Call for Proposals

The 2nd Call for Proposals for ‘Mechanism to facilitate the setting-up and development of innovative firms’, so the official title of PAXIS, closed on 14 September 2001. To prepare the next, more developed phase of PAXIS, the Call looked at identifying new Areas of Excellence for Thematic Networks, a reduced number of Projects to validate successful approaches and three Accompanying Measures. The evaluation of the Call has been finalised and negotiations are now open with those candidates that have complied best with the set of criteria.

An excellent response

“We had a very good response to the call” says Tomas Botella, “both from a quantitative and a qualitative point of view. We received 116 proposals out of which 37 for thematic networks, 57 for projects and 22 for accompanying measures. 64,5% of all proposals scored good or higher.”

Mr Botella was very satisfied with the results of the thematic networks: “All of the 22 accepted proposals for Thematic Networks were classified very good and good by the independent evaluators. The Commission accepted for negotiation 5 proposals from Germany, 4 from Italy, 3 from the UK, 2 from France, Spain and Sweden. Austria, Finland, Denmark and Ireland will participate in the process with one Area of Excellence. I am looking forward to welcoming new members in the Club of Excellence: Berlin, Copenhagen, Dublin, Edinburg, Hamburg, Venice and Vienna.”

PAXIS 2 will not limit itself to the members of the European Union. “The participation of Newly Associated Countries is of particular importance to us” underlines Charlotte Avarello. “We want to ensure that the experience gained through the PAXIS network is not only spread to more areas in the EU but also to the future members. For the projects, most proposals have been coming from Germany and Spain but out of the proposed 412 partner organisations, 146 are from associated countries. These are very promising results”, says Ms Avarello.

Currently, six projects will be negotiated, all having scored excellent or very good as well as three proposals for Accompanying Measures which rated very good. The Commission hopes to be able to conclude all contracts in the first semester of new year.

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In the next issue:
Excellent News will present:
• The Stockholm Conference
• PAXIS evaluation and case studies
• The new Areas of Excellence
• Outlook on PAXIS 2

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