

European Association of Development Agencies  
Association Européenne des Agences de Développement

# EURADA NEWS

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## THE QUEST FOR REGIONAL EXCELLENCE

**RDA-REGIONS-ENTERPRISES / UNIVERSITY RELATIONS**

This Eurada-News contains the document resulting from the work of the Round Table of Practitioners in Economic Development relating to the relations between RDAs, regions and enterprises on the one hand and universities on the other hand.

Seven representatives of four Directorates General of the European Commission took part in the presentation of the results.

The document was largely circulated amongst the European Commission services.

# THE QUEST FOR REGIONAL EXCELLENCE: RDA-REGIONS-ENTERPRISES / UNIVERSITY\* RELATIONS

## Document of the Round Table of Practitioners in Economic Development

Meeting of 6 & 7 April 2006

*"... In our changing economic times, knowledge industry is gaining critical mass and momentum and universities are at the centre of it all ..."* – Charles Hoslet, Wisconsin University

### INTRODUCTION

These days, regional competitiveness is increasingly a function of the ability to leverage both resident local and foreign talent and knowledge as well as the dynamism of emerging local networks. Universities and their competence centres are playing—or will be called upon to play—a crucial role in this context.

Worth noting however is that regions and universities are both diverse in terms of their attitude toward entrepreneurship, leveraging research outcomes, culture, innovation and even their relationship with SMEs. Furthermore, there are huge variations in their budgets.

To a large extent, these differences frame the quality and intensity of the relationship between Universities and RDAs, Regions and Enterprises. They are especially significant when partnerships address fundamental research activities or applied research activities geared toward SMEs. Most universities prefer to – or find it comparatively easier – to manage long-term fundamental research contracts with multinational companies rather than short-term applied research contracts to meet SME requirements.

The American experience\*\* indeed shows that best-known innovation centres have in common a strong group of talented persons, usually concentrated around a university, which promotes the incubation of start-ups. This is the case of the Silicon Valley around Stanford and Berkeley where information technologies were developed and in the Research Triangle of North Carolina where biotechnology industries are flourishing (the Universities of Duke, North Carolina and further universities).

Regions in industrial conversion are characterised by the fact that an important proportion of their populations has skills which are now obsolescent.

In general, public policies concentrate on finding short-term solutions to the social problems of the population instead of implementing initiatives supporting and helping the establishment of a knowledge-based economy.

Thus, the contribution of European universities to regional development needs redefining. Indeed, over the next few years, universities will be training the raw material of the regions relying on the knowledge-based economy, much like coal mines and ironworks provided the raw materials to the successful regions of the industrial age.

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\* In this paper, by "University" we understand third-level education institutions

\*\* Economic Development America – Fall 2005

Some universities are more aware than others of their future role in economic development. For instance, Warwick University (UK) inserted the following job offer in the Financial Times of 27 February 2004: *"Are you interested in the role and future of UK higher education ? (...) We are looking for nominations or expressions of interest from outstanding individuals who can make a significant contribution to the governance and development of one of Britain's leading universities. The position offers the challenge of helping to enhance university's reputation for excellence in research and teaching, its track record of successful innovation and collaboration with the public sector, business and industry and its close and productive links with the local and regional community"*.

The role of public authorities will consist either in retaining talent—according to Time Magazine, 400,000 European scientists have moved to the US—or in attracting it. To do this, they will need to cooperate with universities.

So far, public authorities have favoured the so-called "technology push" approach, which is rooted in the belief that by pumping financial resources into research, innovation—leading to growth—is bound to happen. This model is increasingly being challenged and replaced by a "demand pull". Now, this novel approach requires both reinforcing managerial skills relating to innovation in products, services, processes and business models and mobilising seed capital and business angels (informal venture capital). Furthermore, greater focus is placed on problem solving and client needs and consequently on businesses' potential profit margins. This can also be achieved by marshalling university capacities.

In addition to their role in training and educating students, universities are in theory able to make a major contribution to regional development through :

- Entrepreneurship, via activities such as:
  - ✓ Promoting entrepreneurship;
  - ✓ Developing new businesses (spin offs);
- Leveraging knowledge from:
  - ✓ Marketing project outcomes;
  - ✓ Technology transfers;
  - ✓ Small business consulting;
- Managing infrastructure including:
  - ✓ Preincubators;
  - ✓ Incubators;
  - ✓ Science/Technology parks;
  - ✓ Laboratories shared with regional players;
- Economic coordination by means of active participation in structures such as:
  - ✓ Clusters;
  - ✓ University/SME interfaces;
  - ✓ Seed capital funds;
- Development of public-private partnerships
- Talent attraction.

In addition to the interventions described above, which are of an endogenous nature, there is a need to consider the role of regional universities in terms of:

- Leveraging their reputation to attract and retain talent;
- Promoting internationalisation by transferring the regional know-how to operators in other regions and countries;
- Supporting areas that do not have a university, notably by conducting research activities on their behalf.

Worth noting with respect to the internationalisation of universities is that in late 2005, the DTI (the UK Department of Trade and Industry) earmarked £1.5 million in funding over two years for the creation of "science and innovation bridges" between four universities (Manchester, Imperial College, Cambridge and SET Squared Partnership) and world-class hi-tech colleges and businesses in the US.

Finally, also worth mentioning is that regional development has become the subject of university research efforts. It is therefore useful to try to ascertain whether the outcomes of this work are relevant for practitioners in regional development.

As far as the link between universities and RDAs is concerned, worthy of note is that:

- a) A number of RDAs have established organic links with universities based in their region through cross-representation in each other's management bodies, e.g. boards of directors. This being said, there is a need to be aware of the fact that personal involvement may vary considerably across the spectrum of RDAs and universities.

The sampling of 12 RDA representatives who attended the meeting on 6-7 April 2006 shows that they all have one or more university representatives on their board while only six RDA representatives (i.e. 50%) are members of university boards.

One noteworthy example of cross-representation of RDAs and universities in each other's boards is provided by Jyväskylä (Finland).

Examples of (unreciprocated) university representation in RDA boards are provided by Agence Bruxelloise pour l'Entreprise (Belgium), Shannon Development (Ireland), and ASTER (Italy).

Worth underscoring are the following recent developments in the region of Valencia (Spain), as they are indicative of a trend toward the integration of academia in regional development:

- ✓ The regional ministry of industry was renamed Regional Ministry of Enterprise, University and Science;
- ✓ The deputy dean of one of the main regional universities was appointed Regional Minister of Enterprise, University and Science;
- ✓ A university teacher was appointed Director General of IMPIVA Development Agency.

These changes should support a strengthened role for universities. As for IMPIVA, its role as an RDA in a knowledge-based regional economy should be strengthened.

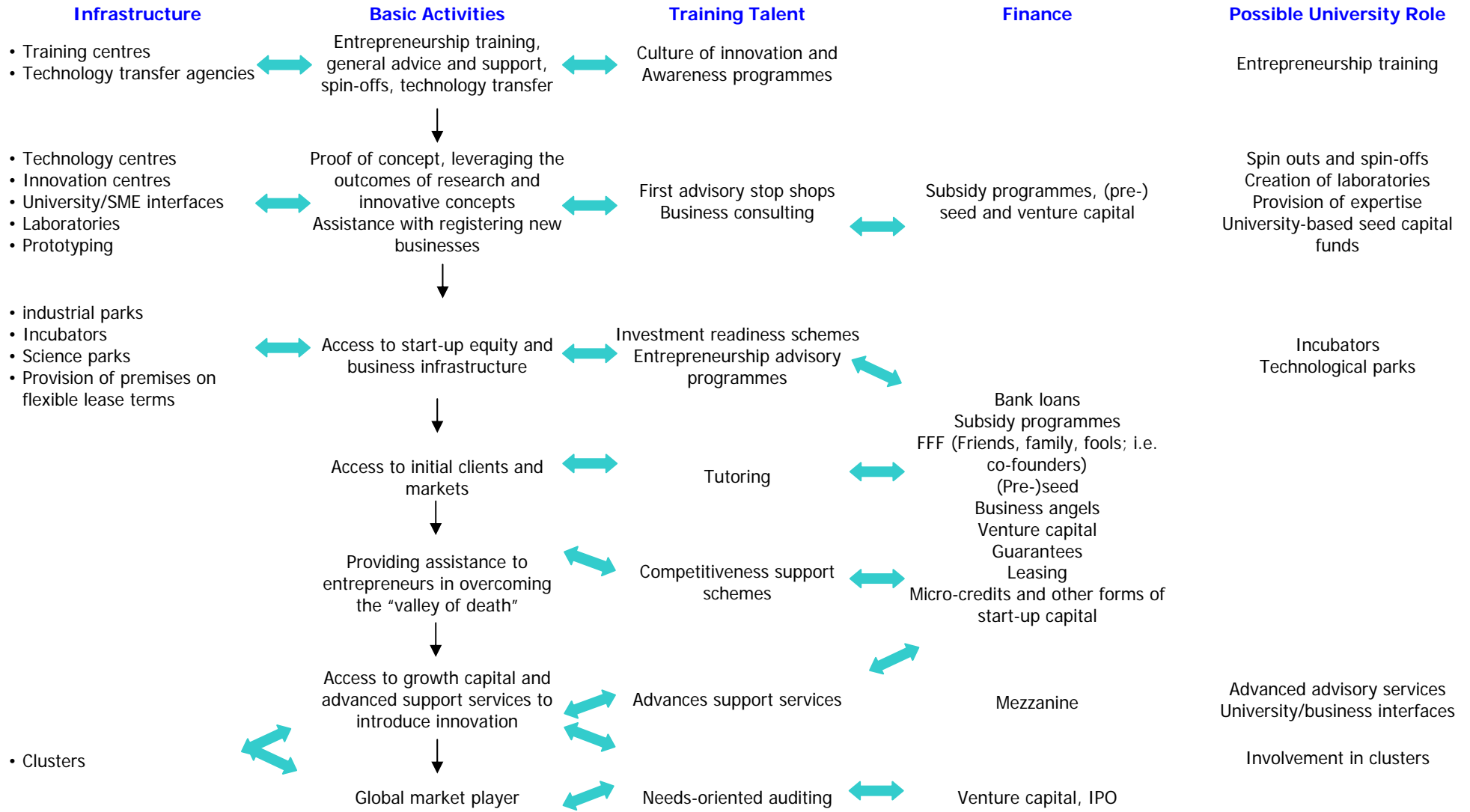
- b) Originally, the University of Limerick (Ireland) was set up by Shannon Development as a key element of its regional reconversion strategy.
- c) The shareholders of ASTER, the Consortium for industrial research, technology transfer and innovation of Emilia Romagna (I) are the regional government, universities and research centres as well as regional business associations. The universities and research centres have 54.5% of the shares, for only 29.5% for the regional government.
- d) Almost all RDAs are using the regional university image in their marketing and communication campaigns.

Some regions such as Scotland, Wales and Emilia Romagna are developing a pipeline or supply chain approach with the higher education system in order to provide all the necessary support from the detection of enterprise ideas to the commercialisation of those ideas.

Scottish Enterprise have developed a strong partnership with the Stanford University (USA) in the field of entrepreneurship training and valorisation of research results which has led to concrete common activities resulting in high tech start-up creations.

CEEVO (Val d'Oise, F) takes part in many awareness and matching activities involving SMEs, universities and research centres, e.g. a "Research and Innovation Week in Val d'Oise".

**CHAPTER 1 MODELLING THE ROLE OF UNIVERSITIES IN THE REGIONAL COMPETITIVENESS SUPPLY CHAIN BASED ON ENTREPRENEURSHIP AND INNOVATION**



## **CHAPTER 2 ENTREPRENEURSHIP**

### **2.1 Promoting Entrepreneurship**

This can be achieved in two different yet complementary ways, i.e.:

- Integrating business development and management courses in the curriculum of different categories of colleges and universities including science and technology departments;
- Providing entrepreneurship training. Worth mentioning by way of example of this is the Business School Solvay in Brussels (B) and Oxford University (UK). Mention should also be made of the initiative of BEP Namur and of the Regional University resulting in the creation of the Namur Entrepreneurship Centre (B).

Notable examples of action taken by universities include:

- ✓ Business plan competitions: Start Cup Bologna, promoted by Bologna University, was the first academic business plan competition in Italy;
- ✓ Targeted training schemes: Said Business School (associated to Oxford University) organises an eight-week course for science graduates on "The Basics of Building a Business";
- ✓ Specific seminars.

Promoting this activity in universities requires consideration of different target audiences both within and outside universities themselves as well as of the types of companies in need of support (high-tech businesses, traditional companies with a potential for innovation, etc.).

If most of experts believe that "entrepreneurs were born entrepreneurs", there is a need to teach entrepreneurs how to become good managers and so to provide them with sound bases so that their enterprises are able to grow and develop.

### **2.2 Business Development**

Some universities provide direct specialist support to students and teachers who are in the process of setting up their own businesses. Such assistance may take one or more of the following formats:

- ✓ Financial support: loans, equity investment;
- ✓ Technical assistance: advice, tutoring, provision of infrastructure, etc.
- ✓ Intellectual property right support;
- ✓ Incubation (through university incubators, such as Alma Cube set up by Bologna University).

To this end, certain universities manage seed capital funds of varying size (€7-8 million in the case of Belgian universities) or grant repayable advances to students with a business project (Twente University in The Netherlands).

According to a report by the Gatsby Charitable Foundation\* (January 2005), the rate of university spin-off development in the UK evolved as follows in recent academic years:

1999/2000	203 new spin-offs
2000/2001	248 new spin-offs
2001/2002	158 new spin-offs

When comparing statistics on spin-offs, it is important to look at the definition of spin-off enterprises. In Scotland, Scottish Enterprise record as a spin-off only an enterprise founding its business on a patent resulting from a research result from the university. Others may not take this criterion into account and so consider as spin-offs all start-ups having a relation with the University, even if it is just a loose one.

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\* *University spin-out companies: starting to fill the evidence gap.*

By comparison, the University of Leuven (KUL, B) supported the development of 11 spin-offs in 2005 and the filing of 84 patent applications. Moreover, it attracted six foreign tech companies (Foreign Direct Investment) to its science park.

Scottish Enterprise (UK) have put in place a vertical sectorial scheme to support enterprise creation from the regional universities. The scheme is built as a pipeline or supply chain and has the following components :

- detection of ideas and teams
- 'proof the concept' support in order to bring the idea to the development stage (prototype)
- improve the managerial skills of the team through an 'enterprise fellowship' and a coaching system. The fellowship is maximum 12 months. In that period of time, the enterprise must be incorporated. Scottish Enterprise provide a grant for one-year wages of the would be entrepreneur.
- access to finance with the objective of leveraging private funds
- space is provided to the team in specialised incubation facilities
- access to world class knowledge thanks to the partnership with the Stanford University.

Since early 2004, AIDA (*Agencia de Innovación y Desarrollo de Andalucía*, Spain) has been delivering a project called CAMPUS, under which regional universities support the development of new businesses. CAMPUS is based on the following principles:

- ✓ Repayable advances granted to newly-developed businesses in the form of loans or equity investments;
- ✓ Subsidies granted to the university as compensation for its provision of technical assistance to businesses;
- ✓ Any capital gains are shared between AIDA and the university;
- ✓ All capital losses are fully covered by AIDA.

Eighteen months into its existence, the CAMPUS scheme has supported the development of 11 new businesses.

In Emilia-Romagna, the SPINNER project financed through the Regional Operative Plan with resources provided by the European Social Fund is supporting new entrepreneurship and the setting up of high-tech enterprises based on the exploitation of research outputs.

During the period 2001-2005, SPINNER has involved some 4,000 people, 1,448 of which have been the beneficiaries of the programme and 900 obtained funds and services for the development of their business idea. Up to now, 69 new companies have been set up.

Direct beneficiaries of SPINNER are students, university researchers and professors, graduates and PhD holders, research centres employees, as well as SMEs, research centres and universities based in the region.

Support and finances are provided to individuals for the development of :

- ✓ business ideas with a high technology content,
- ✓ innovative business ideas aimed at applying a consolidated know-how,
- ✓ industrial research and pre-competitive development projects,
- ✓ technology transfer projects from university laboratories or research centres towards local industry or public administration.

SPINNER provides :

1. Financing.  
For business ideas development, up to a maximum of €45,000 per project, in particular:

- fellowships (€15,600 for a one-year period to unemployed individuals developing a business idea),
- cost covering for specific events (conferences, seminars, technical/specific costs), regardless the employment status of beneficiaries (€2,500 per person),
- purchasing specific services (€5,000 per person).

For technology transfer projects :

- Fellowships (€15,600 for a one-year fellowship to unemployed individuals developing a technology transfer idea),
  - Financing for covering costs and purchase services (€2,600).
- 2) Services, namely advanced training, mentoring for enterprise creation and technology transfer projects, assistance to business planning, legal consultancy, fund raising and assistance for patenting.

Nine "Spinner Points" based in the regional universities and main research centre premises are the first contact point for potential beneficiaries. They support the delivery to beneficiaries of training packages on entrepreneurship and innovation management; research fellowships and incentives for projects aiming to start a business or to valorize research outputs. The Spinner Points can also provide support for identifying and obtaining financing or for elaborating the business plan of new enterprises.

The way in which intellectual property rights are managed by universities has a strong impact on the number of spin-offs created by each of them. Indeed, encouraging spin-offs will considerably differ from one university to the other depending on the way the intellectual property rights are shared between the university, the researchers and the students. In Emilia Romagna (I), for instance, universities can opt between becoming shareholders of the spin-offs or getting a fee of its patent.

Also noteworthy is the example of Welsh Development Agency (UK), operating a support scheme for university spin-off developments through Wales Finance.

AGIT Aachen (D) organises growth contests on the model of business plan competitions for innovative companies. Winners get support from top coaches including some from universities.

Evidently, the initiatives listed above are significant. However, most important is the snowball effect that universities—or associated scientists—are able to leverage. The charts presented below illustrate the influence respectively of KUL (Leuven, B) as well as of the Cambridge University (UK) and of Prof. Hopper a serial entrepreneur from Cambridge University (UK). Worth emphasising is that KUL claims to have developed or attracted 300 businesses to the town of Leuven between 1997 and 2004 and aims to develop or attract roughly 100 more between 2004 and 2010.

Serial entrepreneurs are important for regions because they can be part of marketing and awareness campaigns regarding entrepreneurship and give confidence to would be entrepreneurs.



# MICRO-ELECTRONICS - NANOTECHNOLOGY



## Micro-elektronica - nanotechnologie



Knowledge Centres



**Kenniscentra**

Centres of Excellence



**Centers of excellence**

Purely innovative Businesses

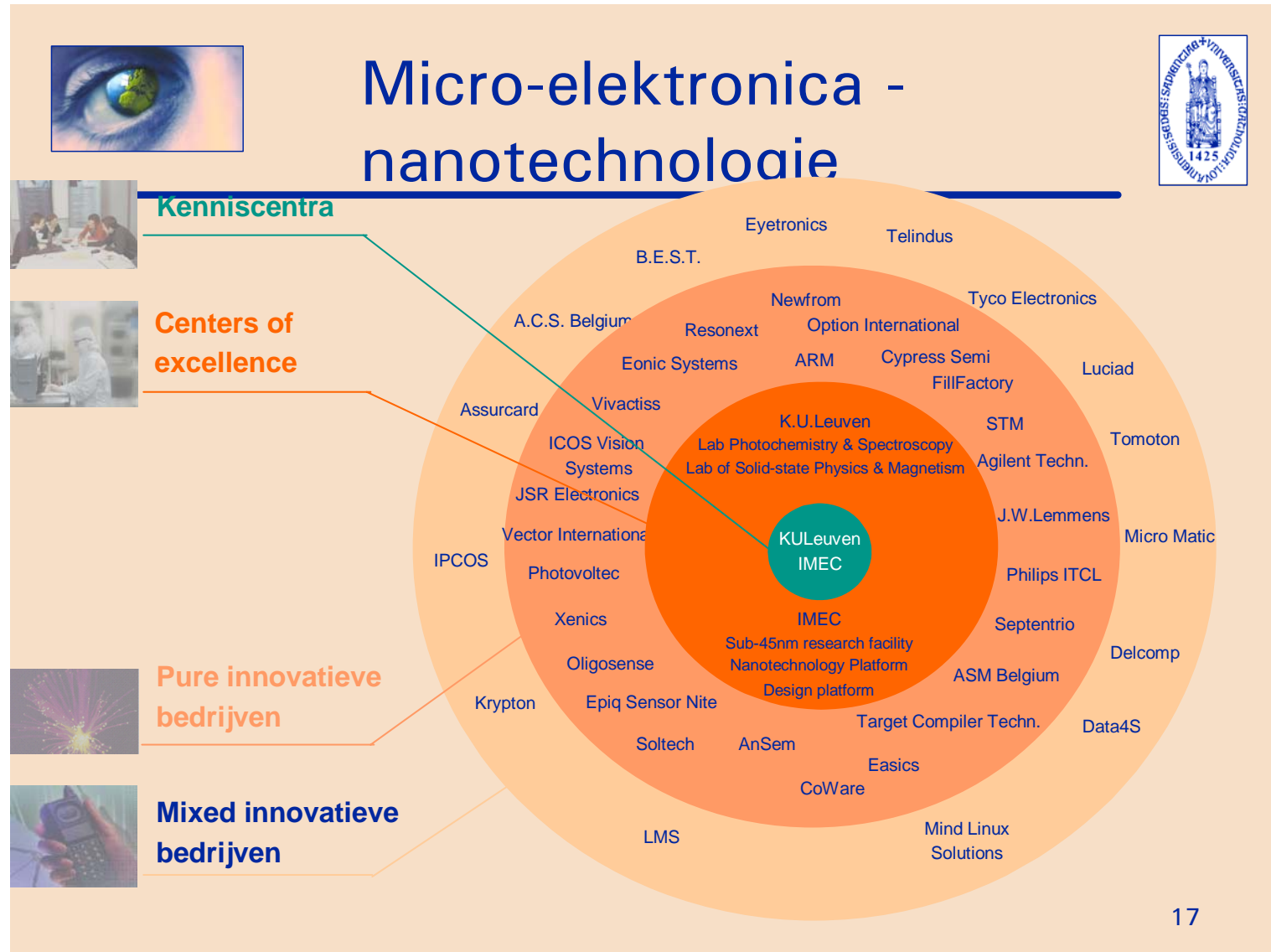


**Pure innovatieve bedrijven**

Mixed innovative Businesses



**Mixed innovatieve bedrijven**



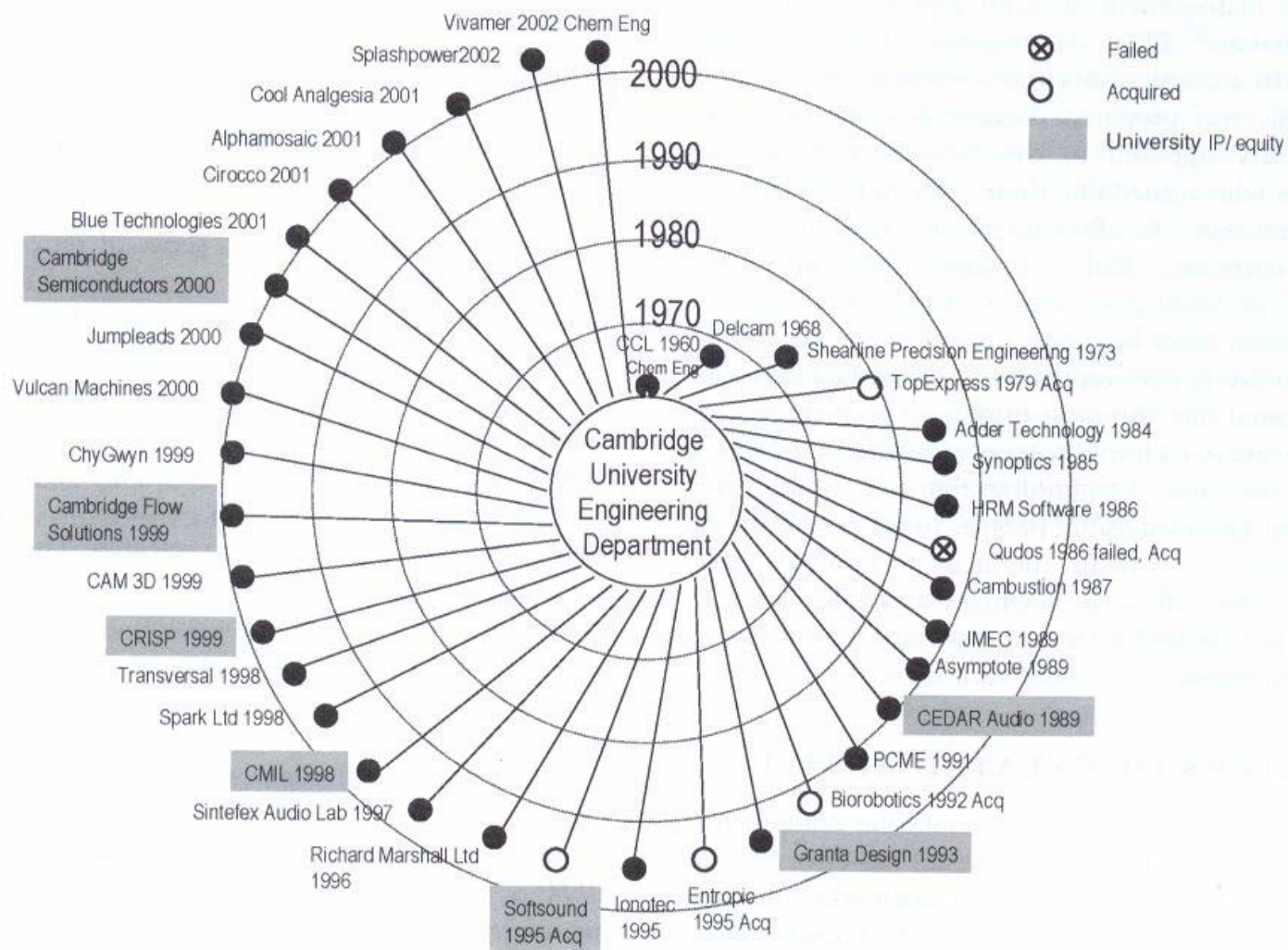


Fig. 7. Companies with founders from University of Cambridge Engineering departments

Source : E. Gaursey & P. Hefferman, Regional Studies, November 2005

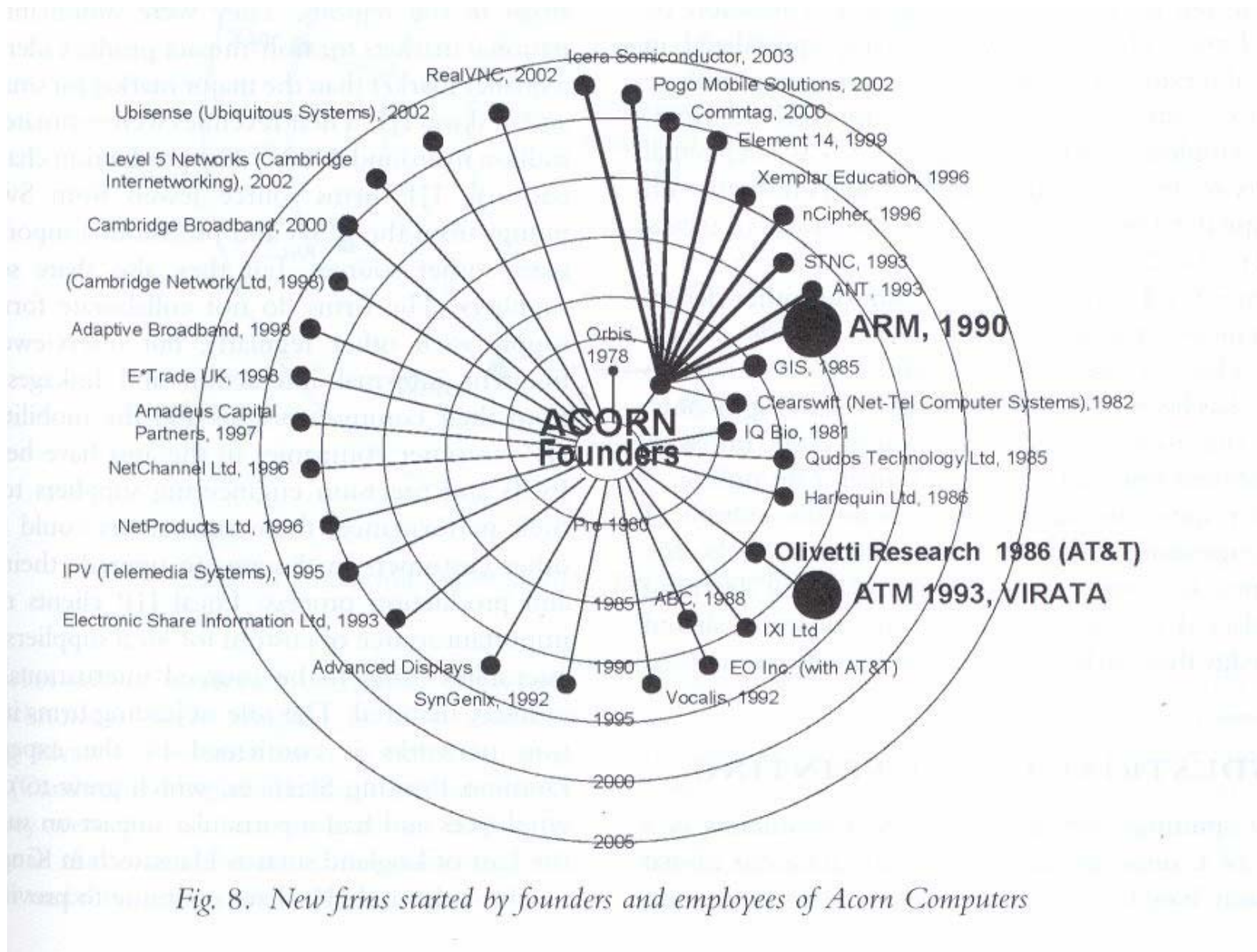


Fig. 8. New firms started by founders and employees of Acorn Computers

Source : E. Gaursey & P. Hefferman, Regional Studies, November 2005

Elizabeth Garnsey and Paul Heffernan

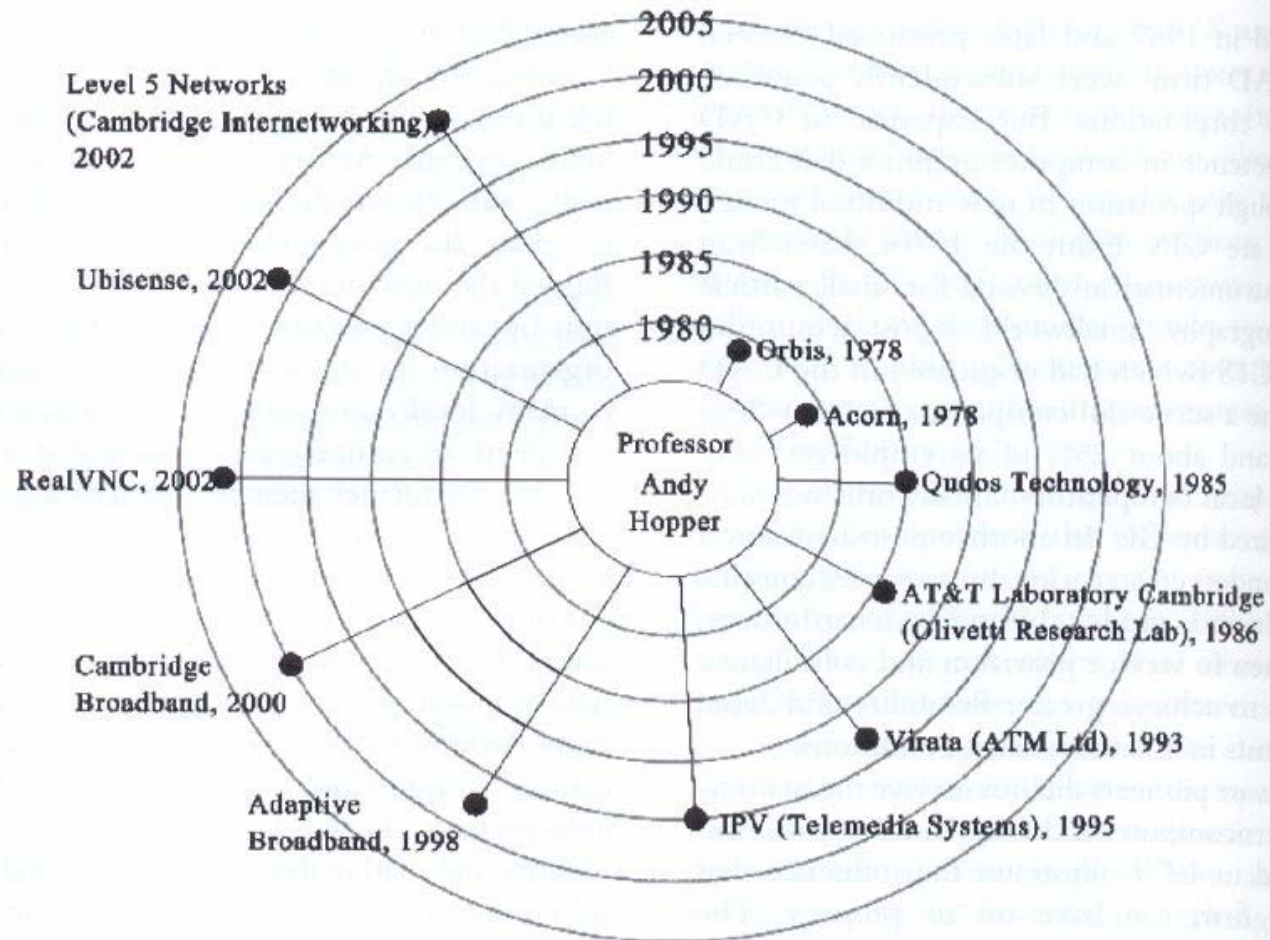


Fig. 9. Serial firm foundation by academic entrepreneurs, e.g. Professor A. Hopper

Source : E. Gaursey & P. Heffernan, Regional Studies, November 2005

### 2.3 Supporting Regional SME to Growth

Universities are able to support the growth of existing regional businesses, mainly from activities including:

- ✓ Consulting;
- ✓ Provision of qualified staff for know-how and technology transfer (teachers, researchers or students);
- ✓ Access to laboratories.

RDAs and other intermediaries have an important role to play in order to maximize the use of university expertise by SMEs. They can :

- a) translate the SME needs into the language understood by academics and researchers,
- b) undertake a segmentation of the regional SME fabric vis-à-vis their potential interest in partnering with universities; this segmentation might be the following : high tech SMEs, potential innovative SMEs, classic SMEs or enterprises with or without founders having studied in high schools. An appropriate approach should be designed for each segment.
- c) Stimulate the clustering of SMEs requiring assistance from universities or research centres. Groups of SMEs are more comfortable to partner with universities than an SME alone. This approach has been successfully implemented by AGIT Aachen (D) for several years.

In other words, RDAs have to act as "go between" and help SMEs to be ready to interact with universities.

ASTER (Agenzia per lo Sviluppo Tecnologico dell'Emilia Romagna) is since 2005 leading the Emilia Romagna Regional Network for Industrial Research, Innovation and Technology Transfer made of 57 structures including 27 industrial research laboratories, 24 innovation centres and 6 innovation parks operating in seven key sectors : advanced mechanics (HI-MECH District), environment, sustainable development and energy, agro-food, building and construction, life sciences and health, organisational innovation, information and communication technologies. This new Network is deeply rooted in the territory and is based on the excellences (competencies, facilities and equipments) of the universities, research centres and laboratories of the region. The challenge of the network is to favour synergies amongst research groups in order to transfer new technologies into business. Enterprises participate either directly or through their associations and are above all the final beneficiaries of the findings, activities and services developed by the industrial research laboratories.

The industrial research laboratories have to become the single access point for SMEs willing to access knowledge from universities and research centres.

In Wallonia (B) a scheme named "First Enterprise" aims at fostering the scientific and technology potential of SMEs by providing a grant to cover 80% (max. €3,720 per month) of the labour cost of a young researcher for a two-year period. Whilst employed by the SME, the researcher needs to undertake a traineeship in a research unit of a university or a research centre. A similar scheme for doctors in science is also available. It should be noted that the beneficiary SME keeps full benefit of any property rights resulting from the research.

Businesses often receive consultancy vouchers to purchase services from universities.

In the US, many universities are involved in regional life. One of the forms this commitment takes is support for local businesses. Worth mentioning by way of example is the University of Colorado's Center for Business Integration, whose aim is to *"to match faculty and students with local businesses seeking help with strategic problems and systems projects*

As for the University of Wisconsin, it has engineered the concept of *"front door for companies as an initial point of contact to identify resources for businesses"*. In order to deliver this concept, the university has set up a department called Office of Corporate Relations (OCR) employing six people full time plus a part-time communications specialist. OCR provides *"a tremendous menu of resources and services, from recruitment of talented students and graduates to executive education programmes, new technology licensing opportunities and access to a range of faculty and staff expertise, research centres and industry consortia"*.

## **CHAPTER 3 LEVERAGING R&D OUTCOMES**

### **3.1 Commercialisation of Research Project Results**

In theory, there are different ways of commercialising research project results :

- ✓ Licensing new technology patents;
- ✓ Transferring technology (cf. 3.2)
- ✓ Developing businesses (cf. 2.2)

Licensing patents filed by universities or their staff is relatively common practice in Europe, as shown by UK figures illustrating this phenomenon:

Academic year	Number of licensed patents	Royalties (in UKP)	Number of patent registrations
2001-2002	635	24,000,000	1,098
2000-2001	483	16,300,000	743

Source: Gatsby Charitable Foundation, January 2005

Worth noting is that the Massachusetts Institute of Technology alone applies for roughly 100 new patents each year, leading to the creation of around twenty new tech businesses.

The cost of patenting has not to be underestimated and can be a barrier for universities or enterprises. In practice, only a few patents generate most of the university revenues; this is true in Europe and in the USA. Sometimes, the revenue of a patent is generated outside the region because there is no risk capital available to secure the product development in the region.

In their effort to leverage knowledge, universities could define different strategies in partnership with RDAs according to the potential for demand at local, national and possibly global level.

### **3.2 Technology and Know-How Transfer**

Transferring technology is a complex process relying on factors that are both internal and external to universities. Knowledge transfers from universities to enterprises can more easily be achieved through staff placement or by a better access to experts. In order to facilitate these transfers, the Irish Universities Association has put in place since 1 July 2003 a portal which collects information from academic and research staff of 11 institutions on a wide range of topics relevant to enterprises. The data can be accessed at [www.expertiseireland.com](http://www.expertiseireland.com)

According to D. Palmintera\*, internal factors mainly include leadership, incentives and recognition, the history and quality of relations between businesses and universities as well as the existence of an entrepreneurial culture. As for external factors, they notably relate to the presence of business angels and seed capital funds, the availability of incubators and laboratories, consultancies and managers and the dynamism of networks.

Universities often face the following dilemmas:

- Using university resources for commercial purposes;
- The conflict between their duty to publish and publicise research outcomes and commercial businesses' requirement for confidentiality.

Some universities have nevertheless managed to strike the right balance between academic excellence and the pursuit of commercial objectives with the outcomes of research projects.

D. Palmintera draws the following lessons from the practices of US universities in the field of technology transfer:

- a strong and focused university research base feeds the pipeline for commercialisation;
- federal R&D funding provides a critical base for technology transfer and commercialisation efforts;
- champions catalyse more successful university based economic development;
- the entrepreneurial culture of a university is key to its technology transfer success;
- networking is an integral part of the culture;
- early stage capital is a critical ingredient in launching university start-ups;
- innovation centres can provide a focal point for technology-based activities;
- incubators and research parks can be important in areas not known for technology;
- private corporations and foundations can play a major role.

The University of Jyväskylä (FIN) has created a position of Innovation Manager. This person provides a wide range of services, from general advice on issues related to innovation and property rights to the provision of any types of support including human resources, needed by inventors who want to develop prototypes.

Another example is the LINKUP service, designed and operated by ASTER (I), that tackles the problem of communication between the regional research base and the enterprises. LINKUP offers support and information both on-line and off-line in order to facilitate relations between the research community and the industry, in view of improving collaboration and the development of joint activities, taking advantage of existing funding opportunities.

Specific activities provide :

- Valorisation of research competences in Emilia Romagna :
  - Mapping of research competences, instruments, Intellectual Property, Technology Transfer experiences and spin-out companies present at a regional level.
  - Information on research structures in Emilia Romagna is available on the website. In particular, the following may be found : directory of structures and laboratories, personal pages of researchers, patents registered by regional universities and research centres, European projects in which these structures are involved, presentation cards of research group activities etc.
- Collaboration forms between industries and the research world. A detailed description of contents, contractual aspects and procedures has been made available on line.

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\* *Accelerating Economic Development through University Technology Transfer in Economic Development America*, Winter 2005

- A Virtual Community offers information on services and publishing tools, favour collaboration and interaction between the research world actors and industry in order to make easier the diffusion of up-to-date information on research activities and on the relations between research and industry;
- Map of regional, national and European funding opportunities to support the collaboration between research and industry.
- Technical assistance is provided to develop collaborations and agreements both to the industry and to the research base.
- Organisation of events on a regular basis to diffuse research findings and develop TT activities.
- Organisation of seminars for the researchers on business starting-up process and exploitation of research outputs.

A very sectorial focused example is the "Virtual park on Genetics and Health Biotechnologies (VPGHB)". Established in 2005, it is an initiative promoted by the Emilia Romagna Region, coordinated by the Consorzio Ferrara Ricerche with the involvement of the Universities of Bologna, Ferrara, Modena-Regio Emilia and Parma, as well as the Istituti Ortopedici Rizzoli (IOR), all based in Emilia Romagna region (I). The VPGHB includes 92 laboratories dealing with research on genetics and biotechnology for human health. They represent a strong knowledge cluster that can count on more than 900 researchers and technicians.

## **CHAPTER 4 LOCAL INFRASTRUCTURE**

Quality local infrastructures are of course essential to develop a regional economy based on knowledge and technology. Regions such as Scotland and Wallonia have used ERDF funds to build incubators and science parks which have helped the transformation of their industrial fabrics. GRETEC (Wallonia, B) has used Structural Funds to build sectorial research centres in the field of biotechnologies, aerospace industry and ICT, which combine buildings and equipments shared between universities and enterprises.

### **4.1 Pre-Incubation**

Universities can play a decisive role in the pre-incubation process in that they have both the infrastructure capacity entrepreneurs need to deliver technological development and the ability to provide business development advisory services.

### **4.2 Incubators**

Incubators play a driving role in spinning off start-ups from university knowledge. They can be set up by universities, RDAs or third parties. What is important is to initiate and investigate collaborative work between those stakeholders—when they are not founding incubator partners—and complementary services that the different regional players can exchange.

### **4.3 Technological Parks**

The presence of a university near technological parks is a precondition of their effectiveness and efficiency. As in the case of incubators, the quality of partnerships between universities and RDAs depends on a careful analysis of universities' contribution to regional development.

Noteworthy examples of successful integration include Shannon Development, the University of Limerick and Limerick Technological Park (IRL), and the cooperation between le BEP Namur, the University of Gembloux and Créalys Science Park (B).



#### **4.4 Joint Laboratories with Local Players**

Equipment costs are becoming more and more expensive and so are no longer affordable by lots of SMEs. Therefore, new partnerships have to be developed in order to help local enterprises access top quality equipment. In some regions such as Scotland (UK) and Emilia Romagna (I) the public authorities are investing in modern expensive equipment and put them at the disposal of SMEs in a time sharing system.

In other cases, universities join forces with different public and/or private regional players to build laboratories that are accessible to businesses. Late in 2005, the *Université François Rabelais* in Tours (F) signed an agreement with Hutchinson and local government to build a fundamental research centre dedicated to elastomers. The financial details of the partnership are as follows:

- Infrastructure: €1 million invested by the City of Tours;
- Measurement equipment: €840,000 and €170,000 funded respectively by the Department and the Region.

The university itself will also invest €2.5 million, while Hutchinson will cover €3.7 million over five years in operating expenses. Other university laboratories will also be party to the agreement.

Another interesting example is provided by Montpellier (F), whose local government and *Centre Hospitalier Universitaire* (University Hospital) have invested €14 million in the development of a regenerative medicine laboratory, of which €6.7 million are contributed by the City and Department while the Region plans to invest €8 million in corporate real estate near the university.

#### **4.5 Collaborative Centre for Technology Convergence**

Technology development requires more and more interdisciplinary approaches. RDAs and universities can cooperate to build collaborative centres to foster technology convergence.

In Aberdeen (UK), Scottish Enterprise have developed an energy park which provides a lot of services such as classical incubation facilities as well as conference facilities and a training centre for academics and enterprises interested in topics regarding oil exploitation, deep sea safety etc.

At the Jyväskylä University (FIN), the "Agora Human Technology Centre" acts as a multidisciplinary centre of expertise for teachers, researchers, students and enterprises. This centre has provided to the region a new learning environment and a unique meeting place for research, education and entrepreneurship. The "Agora" has also created two specialised tools :

- ✓ the VIVECA Expertise Centre of Well-Being which conducts research on human well-being from the point of view of sports and health science. The VIVECA facilities offer a creative framework for the development of teaching, products and new enterprise formation;
- ✓ the Wellness Dream Lab which is a business development programme for SMEs operating in the wellness sector.

A similar approach is applied for the integration of ICT into the paper industry at the Paper IT Centre.

## **CHAPTER 5 DRIVING THE REGIONAL ECONOMY**

Regional public authorities should more and more involve RDAs and universities in foresight scenarios to build their future. Indeed, emerging technologies require new policies. Involving RDAs and universities in those scenarios will help them subscribe to the long-term vision of the regional development.

### **5.1 Clusters**

Universities should be regarded as key partners of any initiative to set up or drive clusters.

The most famous clusters include a university that understood the mutual benefits of membership. Noteworthy examples include:

- ✓ The University of Wageningen (NL) in the cut flowers cluster;
- ✓ The University of Leuven (B) in the microelectronics & biotech cluster;
- ✓ The University of San Diego (USA) through its CONNECT programme in the biotech and telecom clusters of San Diego Bay;

Prof. A. Harkins from the University of Minnesota\* explains that *"universities are well positioned to import knowledge into the clusters of which they are part, and should be encouraged to play this pivotal role. Through its connections across regions and nations, a university is part of a virtual knowledge network. Bringing outside knowledge to bear on a local cluster can make the cluster more competitive"*.

The role of universities as cluster catalysts can be illustrated by the experience initiated by the University of Leuven (B) through the Leuven Innovation Networking Circle, which bring together around 500 members, who were recently formed into industry-specific sub-groups called L-SEC and DSP Valley.

In France, universities are due to become important actors of the competitiveness poles recently created.

### **5.2 The University/Business Interface**

As indicated in section 2.3 above, the presence of a dedicated university unit dealing with relations between academia and businesses is vital to the former's contribution to regional economic development.

To be efficient, such interface needs dedicated quality staff who must understand the enterprises' and entrepreneurs' needs and concerns. The people employed in such interface must be able to detect innovations which can be put rapidly to the market. Such expertise is often scarce in most of EU regions.

Such interfaces make an important contribution to universities' regional influence. For instance, over the last eight years, the interface set up by the University of Leuven (B) has promoted the emergence of a world-class technology development centre gathering more than 300 tech companies. The model used to set up this competence centre drew inspiration from the models in evidence in Cambridge (UK) and several US universities.

### **5.3 University Seed Capital Funds**

As in the case of other local tools, regional public authorities and RDAs may or may not be initial investors in seed capital funds set up by universities.

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\* *Knowledge Clusters and Entrepreneurship as Key to Regional Economic Development – University of Minnesota (USA).*

Scottish Enterprise (UK), in cooperation with the regional business angel network named LINC Scotland, have put in place a co-investment fund which is able to complement business angel investment. This co-investment fund is due to play an important role in second or subsequent rounds of funding of innovative start-ups. In Wales (UK), Finance Wales have created a university spin-off fund. In Wallonia (B), IGRETEC and BEP Namur are both shareholders of specialised university seed and capital funds.

## **CHAPTER 6 SETTING UP PUBLIC-PRIVATE PARTNERSHIPS**

Universities may have an important role to play as catalysts of public-private partnerships aimed at consolidating the presence of large companies in their region (see section 4.3).

Worth recalling is that Philips created in Caen (F) its own campus and tries to attract part of the University and other enterprises to do joint research on that campus. We also note a plethora of foreign companies in the technological park set up by the University of Leuven (B).

Siemens recently signed a corporate venturing agreement with the University of Berkeley (USA) through its TTB (Technology to Business) programme.

## **CHAPTER 7 TALENT ATTRACTION**

RDAs and regional authorities should promote the University to foreign talent or to natives who have been migrating in other excellence centres, as they do to FDI. In order to do so, they should work together in assessing the advantages that the University can offer and in advertising and recruiting potential talent. They also could help local University to organise and participate in events such as the "World MBA Tour". According to the Japan Times dated 2.11.05, 90 world's top business schools participated in this tour, among them less than 30 European ones, mostly from the UK.

RDAs should work with universities to establish good relations with the best talented foreign students so that they bring their knowledge in case they remain in the region or they become "regional ambassadors" in case they return in their countries. In order to achieve that goal, RDAs should create good hosting conditions and provide working experiences in local enterprises for such foreign talents.

## **CONCLUSIONS**

It is in the interest of RDAs and universities to develop synergies, as these constructs are able to:

- ✓ Train skilled regional labour;
- ✓ Set up research centres, i.e. vehicles for innovation and knowledge, which are vital components of regional economic development;
- ✓ Become catalysts of entrepreneurship and the innovation mindset;
- ✓ Act as components of the regional marketing, branding and communication strategy.

In short, RDAs are facing a triple challenge:

1. How to mainstream academic teaching of entrepreneurship?
2. How to best leverage research outcomes through spin-off developments?
3. How to teach university research centres to cooperate with SMEs?

In other words, there is a need to push research outcomes toward companies and to better prepare them to contact universities.

## **RECOMMENDATIONS**

RDAs and universities should :

- review the entrepreneurship training made available to students and staff as well as to would be entrepreneurs;
- analyse the impact on spin-off creation of the way in which regional universities manage the intellectual property rights;
- map their collaboration paths, for instance in the following areas :
  - legal competencies
  - level of autonomy
  - volume of public support available
  - research intensity
  - spin-off culture
  - access to risk capital
  - infrastructure availability and accessibility
  - contribution to the labour market needs
  - attraction of EU co-fundings
  - understanding of SME needs
  - valorisation of research results
  - attitude towards SMEs and entrepreneurship

## ROUND TABLE OF PRACTITIONERS IN ECONOMIC DEVELOPMENT

6/7 April 2006

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