

# **EUROPEAN TREND CHART ON INNOVATION**

Trend Report:

“Start-up of Technology-Based Companies”

Covering period:  
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**EUROPEAN COMMISSION, DIRECTORATE GENERAL  
ENTERPRISES  
“INNOVATION AND SME” PROGRAMME**

## The European Trend Chart on Innovation

Innovation is a priority of all Member States and of the European Commission. Throughout Europe, hundreds of policy measures and support schemes aiming at innovation have been implemented or are under preparation. The diversity of these measures and schemes reflects the diversity of the framework conditions, cultural preferences and political priorities in the Member States. The "First Action Plan for Innovation in Europe", launched by the European Commission in 1996, provided for the first time a common analytical and political framework for innovation policy in Europe.

Building upon the Action Plan, the "*Trend Chart on Innovation in Europe*" is a practical tool for innovation policy-makers and scheme managers in Europe. Run by the "Innovation" directorate of DG Enterprise, it pursues the collection, regular updating and analysis of information on innovation policies at national and Community level, with a focus on innovation finance; setting up and development of innovative businesses; the protection of intellectual property rights and the transfer of technology between research and industry.

The Trend Chart serves the "open policy co-ordination approach" laid down by the Lisbon Council in March 2000. It supports policy-makers and scheme managers in Europe with summarised information and statistics on innovation policies, performances and trends in the European Union. It is also a European forum for benchmarking and the exchange of "good practices" in the area of innovation policy.

### The "Trend Chart" products

The Trend Chart on Innovation has been running since January 2000. It tracks innovation policy developments in all EU Member States, plus Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Liechtenstein, Lithuania, Norway, Poland, Romania, Slovak Republic and Slovenia. The Trend Chart web site ([www.cordis.lu/trendchart](http://www.cordis.lu/trendchart)) will provide access to the following services and publications, as they become available:

- a database of policy measures across Europe;
- a "who is who?" of agencies and government departments involved in innovation;
- a series of six-monthly country reports for all countries covered;
- a series of six-monthly trend reports covered on each of the four main themes;
- a number of benchmarking reports;
- the European Innovation Scoreboard and other statistical reports;
- a news service and thematic papers;
- the annual reports of the Trend Chart;

The present report was prepared by INBIS Ltd. The information contained in this report has not been validated in detail by the Member States or by the European Commission.

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## Executive Summary

Start ups of technology-based companies are forming an ever more significant proportion of the total start-ups in all fields of activity.

Increasingly, the creation of such companies is made possible by the availability of Venture Capital. This phenomenon has led to a change in culture with potential entrepreneurs, especially in the science and technology sector, leading to a self-sustaining process of business creation.

Regional and local policy makers have been operating measures to promote high-technology start-ups for some years. However, public policy makers at national level have only recently taken a renewed interest at national level in high technology start-ups. This leads to different measures related to innovation financing which consequently has an important impact in helping the creation of technology-based companies.

This new set of measures includes in particular: provision of early stage finance, provision of consultancy services, (non financial) intermediation services, active promotion of university spin-offs and development of high technology incubators offering the whole range of services needed by a fledging company.

In the Member States with a federal constitution/administration, a many measures are implemented at regional level.

The following trends have been identified:

- A quasi-general move to develop **technology specialised incubators** involving public/private partnership. Incubators provide, in theory, at the local/regional level all the services required by start-ups (in particular including by one means or another the provision of finance). A further survey in these new structures would be useful to assess early results and to map their different characteristics/functions through different Member States as well as to give a first indication of the economic justification for such policies.
- A **new way of policy making at the national level** (in particular through competitions to select the best actions to support the creation of spin-offs/technology firms) which leaves more room for private/local or regional initiative in shaping support measures. More detailed information on the results of these competitions would allow a systematic comparison, exchange of experience between Member States in this area and possible guidelines for Member States which have not yet undertaken such initiatives.
- **Soft** (intermediation) **measures** to support entrepreneurs and start-ups through encouraging networking with a wide array of actors at the local/regional level. A systematic identification of these measures would provide a solid basis for exchange of experience between actors involved in such measures.

The main activities in the field of promoting technology-based start-ups are strongly related to the improvement of financing options, especially the access to venture capital. State subsidy, venture capital, consulting and technical support towards financing and implementation of R&D projects up to saleable products, process or technological service are essential to start-ups of technology-based companies.

## 2. Introduction

The start up of technology-based companies has continued to increase over recent years and over this latest reporting period. Policy makers are for different reasons more and more interested to see such ventures being set up.

The number of high-tech investments is growing by at least 1/3 per year. As a result of improved access to financial means and an increasing number of entrepreneurial success stories, interest continues to grow in investing in technology-based companies which promise a high return on investment. This growing success is generating a self-sustaining virtuous circle, which is leading to yet more creation of high-technology start-ups.

This situation has been matched by a new interest from national policy makers for the start-up of new technology firms. While support to innovation in SMEs used to be spread equally over all SMEs, it is only recently that important public measures (at least at the national level) have been specifically targeted to the creation of new technology firms, in particular in the areas of Information Technology and Biotechnology.

Until quite recently, one of the most visible attempts to foster the development of links between Universities and Industry and the start-up of new technology firms had been through the development, on a local level, of Science Parks and Business Incubator Centres. This trend, which lasted throughout the nineteen eighties and early nineties, led to the creation of around 200 Science Parks in Europe. This movement has revealed its limitations, however, with the realisation that a wider array of policies had to be developed to encourage the creation and growth of technology-based firms.

One can argue that this state of affairs comes from the realisation by EU Member States that national economies can only create jobs and wealth if they produce more technologically innovative products than their competitors. Statistics<sup>1</sup> show that the world-wide share in high technology sectors of the four main EU countries (France, Germany, Italy and UK) declined from 19 to 9% during the period 1992-1996.

The renewed interest in the creation and growth of high technology firms stemming from European research more or less coincided with the debate that was launched at a European level on the issue of “Innovation, Creation of new businesses and Jobs”. The debate, which started in 1997, allowed an assessment of the relationship between the creation and development of innovative companies and employment. It highlighted the gap between the situations in the United States and in Europe in terms of creation of innovative companies and employment. The measures recommended within the framework of this exercise follow three main complementary axes:

- access to skills (technical as well as managerial)
- access to adapted sources of finance (pre-seed and seed in particular)
- the creation of an environment conducive to innovation (including the development of an entrepreneurial mentality and an improvement of the fiscal and regulatory situation for new firms).

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<sup>1</sup> OECD data Quoted in the European Innovation Scoreboard for the Knowledge Economy

This is a testament to the wide variety of factors which influence the start-up of new technology firms and the difficulty of isolating those which are specifically related to this objective. It is no surprise, therefore, that many of the measures that appear under this theme are either technology incubators or can also be categorised under the heading of innovation finance.

Taking stock of this situation, policy makers of Member States, in particular those where the phenomenon was not very well advanced, responded with more measures designed to increase the amount of money for seed and early stage capital and to reinforce the support available to new potential entrepreneurs. During the Lisbon Summit (March 2000) the necessity to have a strategy to prepare the transition to the knowledge-based economy was recognised and a number of steps in that direction have been taken. In particular, the importance of the creation of high-technology start-ups was recognised by the Union together with the necessary measures to support this move.

Some issues can be raised, not totally dissimilar to the ones that were raised when most European countries were searching for ways to develop a Venture Capital industry. Among them:

- How to make sure the European Union does not fall (or remain) behind its main competitors?
- How to benchmark activities in this area (including with respect to the EU's competitors)?
- How to support the movement in those Member States where it is the most active and start it where it still needs to happen?
- How to ensure the best co-ordination between public support measures and private ones (with the objective of not discouraging private initiative in this area)?
- How to assess the efficiency of the most recent measures to support the creation of new technology based firms, in particular incubators?

### **3. Analysis of current policies**

#### **3.1. Analytical Framework**

The national correspondents have collected four new public measures in this reporting period that have been gathered under the creation of Technology-Based Firms in this edition of the Trend Chart. We have chosen to categorise these new and pre-existing measures according to the following typology.

- Promotion of R&D in companies
- Financial measures
- Provision of pre-seed (or early stage) financing by public organisations
- Provision of free consultancy services
- Intermediation services
- Promotion of university spin-offs
- Incubators

It is rare, however, for one measure to present one type of support mode. Most measures present a bundle of support actions, very often including both provision of early stage finance and management consulting.

We can also note that measures can either be:

- Of a horizontal nature, promoting a limited set of the above aspects across a Member State.
- Of a more local, vertical nature. These are generally measures to promote technology incubators. They put together all horizontal measures to specifically support one target group.

One could also think of a wide number of actions which are not dealt with here, but which have been invoked during the “Innovation, Creation of new businesses and Jobs” debate, for example:

- Measures intended to promote an entrepreneurial culture with scientific personnel and researchers
- Measures aiming to simplify the creation of a business (administrative simplification)
- Measures designed to change the status of public researchers to enable them to carry out business activities together with research activities
- Measures regarding the use of public research establishment equipment.
- Measures tending to facilitate the acquisition/use of IPR by researchers/businesses for business purposes

##### ***3.1.1. Direct funding of R&D in companies***

In this type of measure, funds are directly or indirectly (grants, loans, tax relief, equity, etc.) provided by government or government controlled agencies to companies in order to finance R&D and innovation projects which are considered too risky to be financed on a purely

commercial basis. Most of these measures are of a generic nature and are not specifically targeted at start-ups, even if they can be used by them. They are not therefore discussed in this report.

### ***3.1.2. Innovation Finance***

Measures intended to improve the financing of innovative firms such as the development of a Venture Capital industry, or such as increasing the interest of the banking system for start-up firms, can obviously have a direct or indirect impact on new technology firms. Many of these measures have in addition a specific facet which deals with start-up firms. It is unlikely, however, that professional sources of finance are interested in budding companies, unless they can present all the characteristics of a world-beater at a very early stage.

### ***3.1.3. Early stage Finance***

Obtaining finance, whether as a loan or as equity, is one of the main problems for the creation of new technology based firms. The reasons for this state of affairs are well documented:

- Lack of collateral
- Intangible assets
- Lack of track record
- Product uncertainty
- Market uncertainty

In addition, the amounts involved at this stage (€50,000 to 200,000) are very often too low for many professionals to be interested as they would not be able to offset their management costs.

Clearly, innovative companies are of no real interest to most professional risk investors before they have built up a credible business plan and have something tangible to sell on the market.

They are of no interest to most banks before receiving their first orders, and a well-charted cash flow provision for the next years.

Public intervention in this domain aims to foster, through direct or indirect measures, the financing of these firms to the point that they can be of interest to professional financiers/investors even beyond measures destined to develop a performing financial industry. The costs they have to cover are typically:

- the development of a prototype that can be sold on the market,
- the development of a business plan,
- the protection of their IPR.

Typically, this pre-seed, money would cover the topics mentioned above, as well as, in a number of instances, the costs of living of the entrepreneur. They are very often provided through a fund linked to an incubator. An important issue is to ensure efficiency of this support. The preferred route in a number of Member States is now through public/private partnerships and the active involvement of experienced businessmen.

### ***3.1.4. Provision of consultancy services***

New entrepreneurs are most in need of consultancy when they create their company. They have a very wide range of problems to deal with and very limited resources. They sometimes have very little experience themselves and are not able at that stage to hire the necessary competence while having very little money to buy outside consultancy services. Making consultancy and services available to start-ups is therefore a major field for public intervention.

### ***3.1.5. Intermediation services***

One can argue that the recognition of intermediation as a tool to support innovation is relatively new. It is based on the assumption that “tacit knowledge” is probably one of the most efficient ingredients in innovation and entrepreneurship in a knowledge-based economy<sup>2</sup>.

Intermediation processes do not provide consultancy or advice as such, but ensure that young entrepreneurs are effectively introduced in the relevant circles where they can find partners for developing their companies; this is most often financial circles, but can also be potential technology partners, other entrepreneurs, researchers, etc.

### ***3.1.6. Promotion of university spin-offs.***

Measures under this heading have a large degree of congruency with measures discussed in the Analytical Report on Technology Transfer.

This is a specific case where the creators of the new company bring know-how and sometimes IPR from a research centre to create a new company. A wide array of measures can be implemented to encourage this type of business creation (favourable terms for IPR, possibility to use the research centre’s equipment with favourable conditions, etc.). Measures, including regulatory, can be taken at national level for the promotion of spin-off firms from Universities or Research Centres, etc.

Such measures are characterised by the fact that they are normally specifically targeted to current researchers or employees in Universities or research centres with the objective of helping them to set up and develop their own companies.

Alternatively they aim to find individuals or start-ups, outside the research organisation to take the idea forward on a commercial basis.

### ***3.1.7. Incubators***

The notion of incubators is not really new. Business Innovation Centres have been in operation since the late 1980s. Up to now, however, they were mainly concerned with the issue of regional and economic development. Incubators specifically preoccupied with the issue of new technology start-ups, technology exploitation and transfer are, in Europe, a relatively new phenomenon.

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<sup>2</sup> See for example the document prepared for the European Commission “Towards European Innovation and Diffusion Policy for the Knowledge-Driven Economy – Paul David 2000

Incubators are, by definition, local; they are very often associated with a Science Park or a research centre. They are designed to provide, locally, all the services that a fledging enterprise needs (and which are provided under specific labels): physical hosting; consultancy services; strategic, professional (and sometimes management) support; intermediation; finance (in particular early stage); sometimes scientific equipment; etc. They also implement and coordinate at this level the policies initiated at the national and/or regional levels.

### **3.2. Summary of National Correspondents' Reports**

#### ***3.2.1. Direct funding of R&D in Companies***

Special measures continue to be in place to cover product development and marketing costs. They offer state-subsidy, venture capital, consulting support towards financing and implementation of R&D projects up to the saleable product, process or technological service. So far, only few countries apply these measures, e.g. Germany, Austria.

#### ***3.2.2. Innovation Finance***

Innovation finance is closely related to other innovation financing schemes. Special seed financing programmes concentrate on financing and offer favourable terms for start-ups within their programmes. Equity capital guarantees are also interesting for technology-oriented start-ups. In almost all Member States and Central European countries, a number of general financial measures are in place to facilitate in general technology start-ups. Guarantee schemes also aim at making it easier for a new company to find finance. The different measures related to innovation financing, e.g. in France, also have an important role in helping the creation of technology-based companies.

#### ***3.2.3. Early Stage Finance***

Early stage finance is connected to funding on a grant basis which helps to develop the product and the business concept. All countries apply this scheme. However, normally, R&D is not funded under such a scheme which is more appropriate for incubators or business incubation centres, e.g. Ireland, Portugal, Belgium (Wallonia and Flanders).

Other measures, such as investing in share-capital (Finland) and other equity-related or complementary forms of finance are also possible.

Horizontal measures like the PROFIT programme in Spain (ES 17) are a novelty and its objectives are to finance part of the business plan and the application for start-up funds for these firms, in other words to promote the creation of new technology-based companies.

In the UK, the Government has launched a new measure (UK 46) to encourage more high-tech small firms to start up, or to develop new research capacities. Under such a scheme, Government departments will open up R&D procurement programmes.

In Biotechnology, the BMBF offers the programme "BioChance" (DE 23) and BioProfile (DE 52) in which start-ups are supported by direct subsidies.

In March 2000, the Dutch Minister of Economic Affairs announced the establishment of a Techno-Starters Platform (NL 32). In August 2000, the Techno-Starters Platform was

launched under the symbolic name of “Dreamstart”. Fl 100 million is available for Dreamstart from 2001 to 2004.

#### ***3.2.4. Consultancy services***

Most of the measures for start-ups are accompanied by consultancy services. Technological institutes and Universities are funded to support companies in their innovation process. The Internet will in the future play a greater role in delivering start-up services on-line.

#### ***3.2.5. Intermediation***

More and more importance to intermediation activities is attributed to Business Angels. In general, a network of institutions acting as a platform for information exchange between investors and entrepreneurs provides a valuable contribution and facilitates the building of a relationship between new entrepreneurs and investors.

Moreover, at institutional level, such measures are also taken up with the aim of improving mutual understanding between financiers and SMEs.

#### ***3.2.6. Promotion of University Spin-offs***

In all Member States, the issue of commercialising the results of research through the stimulation of spin-offs from academic or public research or the creation of new technology-based firms has been placed higher on the political agenda in the last couple of years.

Measures focusing exclusively on support for the creation and early growth of new technology-based firms are growing, going hand in hand with a series of other actions which are targeted directly or indirectly at start-ups and spin-offs. These actions allow actors to finance a whole series of measures aiming at promoting the creation of businesses by students and researchers.

In general, the tendency is to focus on strengthening links with business also with the aim to persuade talented researchers to stay in the country and to offset the effects of the scientific “brain drain”.

It is worth mentioning that Universities or Institutes of Technology in some Member States have a significant role to play in regional development, not least in the creation of spin off firms.

New measures in Greece on finance aim particularly at NTBF start-ups and academic spin-offs (GR 36, GR 37 and GR 39). This should result in 50 NTBFs in the year to come.

#### ***3.2.7. Incubators***

Most Member and Associated States, (except in cohesion countries) are in the process of launching new, specialised, technology incubators with public funding: Belgium (BE 27), Bulgaria, Cyprus (CY 9), Denmark (DK 4), Finland (FI 1), France (FR 12), Israel (IL 1), Latvia, Luxembourg (LU 4), the Netherlands (NL 15) and the UK (UK 21).

Due to the new regulation of the structural funds, the cohesion countries (Italy, Greece, Spain and Portugal) are trying to catch up in setting up incubators. This can be explained by the fact

that innovation and science policies are very often funded through these structural funds, which has a positive impact on the acceleration of new developments in this area.

In Ireland, a Business Incubation Centre programme is aiming to expand the base of high tech companies operating on college campuses by providing funds to develop and expand incubation space facilities. In Portugal, a similar programme (POCTI) is involved in the creation of incubators for firms created by young researchers.

A solution which seems to have been found to the question of prioritising incubator schemes is the competition system by which only the best/most professional incubators are funded, e.g. DE 21 (EXIST), FR 12 (Creation of regional incubator structures), UK 5 (Biotechnology Mentoring and Incubator Challenge). The aim also has been to build a network of relevant regional institutions like Universities, public research organisations, technology transfer organisations, firms and public authorities. The funding for the German EXIST programme was doubled in 2000 due to its success shown in a strong demand for start-up related qualification and further education measures in the five regions where the programme was implemented.

The methodology governing these competitions needs to be highlighted as a new way of channelling public funds into innovation policy and of ensuring its efficiency. The business incubator industry is to be considered a powerful tool for the creation of SMEs, for supporting them in start up and for increasing their growth rate.

## 4. Conclusions

Over the last year, start ups of technology-based companies have increased greatly in number. National policy makers as well as potential entrepreneurs have noted that science and technology are vehicles which allow new ventures to start. This in turn leads to the creation of new firms, strong commercialisation in the high tech area, employment creation and the strengthening of regions often adversely affected by the closure of their traditional industries. This can attract through a catalytic effect other ventures which increase investment focusing on the newly created spin offs and spin ins.

This analysis has allowed the identification of several trends:

- a strong move to support the development of specialised technology incubators involving public/private partnership which today provide comprehensive support with special emphasis on financial support.
- In most Member States, the trend by policy makers is to provide new companies with assistance to build up and relate with a network of partners at the local and regional level.
- New financial measures specially targeted to serve the needs of start-up companies are put in place.
- Finally, a greater emphasis from national policy-makers on this area of policy. It was noted earlier that a number of issues which used to be dealt with at the local and regional levels are now taken care of nationally. National policy makers have, however, been careful to take into account varying regional characteristics and, through the organisation of national competitions have maintained a high level of flexibility for local actors, both public and private.

The information collected raises the following issues:

- In Member States where policy making in the area of innovation is less centralised, it is much more problematic to obtain all information available due to this decentralisation. This leads to the fact that information on regional initiatives is sometimes missing.
- To compare data available by quality or comparability to allow meaningful comparisons between Member States is difficult. A special effort in this respect should be undertaken to obtain such information which is most useful.
- Earlier results (1999-2000) should be assessed to analyse the information/results achieved related to start-up of technology-based companies to map the different characteristics and functions through different Member States, to identify good practice. The results should provide valuable information to policy makers which may help in setting up more common measures for future actions promoting start-ups in the technology area.

## **5. ANNEXES**

## 5.1. Distribution of Measures by Countries/Themes

	<- 1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>Incubator</b>									DE23	UK21	
	FI1							BE27	NL15	DE52	IT 23
	BE51	IL1						DK4	LU4	FR12	NL24
<b>University Spin-offs</b>				FI6	BE37			BE27	DE21		AT 47
							DK8				AT41
<b>Consultancy</b>	FR1					AT13	DE22	BE27	AT16	FR11	DE38
<b>Early Stage Financing</b>	NO24							DE20	NL15		IT26
	AT5				NO11			NO19	DE21	NO9	NL32
					BE37	AT13	DE22	AT12	AT16	FR11	NL24
<b>Financial Environment</b>	UK2										GR 37
	AT3	IL3					UK5		AT15		
							DK8				
<b>Intermediation</b>	DE47	IL1					UK6		DE23		ES17
							UK5	DK4	DE50		
<b>Other</b>	UK8										PT16
<b>Innovation Finance</b>	AT5				DK2	DE12	NL23	AT12	AT7	FR13	UK31
	IL2					AT13			LU2		UK 46
<b>Direct Finance To Firms</b>	AT3	IL3			GR14	AT13	UK5	AT29	NL15		NL24
	AT5	IL1				DE12		DE20	AT7		ES19
	AT14					NE125		AT11			ES17
	GR2										
	NO4										

## 5.2. Table of measures

A summary of Innovation support measures since 1990, as from the data sheets provided by National correspondents .

### TREND CHART ON INNOVATION CREATION OF TECHNOLOGY FIRMS

<i>Coverage</i>	<i>Measures</i>	<i>Website</i>	<i>Date</i>	<i>Content Summary</i>	<i>Mode of operation</i>	<i>Targets</i>
Austria	<b>AT 3 Seed Financing Programme (Venture Capital Programme)</b>	<a href="http://www.innovation.co.at">www.innovation.co.at</a>	1989	Provides quasi-equity, up to €728,000, to technology based start-ups and new ventures promising to offer superior know-how (products, processes or services), and supports the coaching of the entrepreneurs by the investment.	Loans – Firms Financial environment	SMEs/Industrial SMEs
Austria	<b>AT 5 BÜRGESS / Young Entrepreneurs Programme and Equity Capital guarantees</b>	<a href="http://www.buerges.com/en/naviset/f_ford.html">www.buerges.com/en/naviset/f_ford.html</a>	1977	Supports the build up of equity capital for the foundation of new enterprises, by means of grants for interest of saved -up own capital resources, and guarantees equity holdings in SMEs for minority participation in cash and for a minimum of 10 years	Grants – firms Equity guarantee Early stage Financing	Individuals SMEs/Industrial SMEs
Austria	<b>AT 7 Technology financing programme for SMEs- ERP</b>	<a href="http://www.fgg.at/">www.fgg.at/</a>	1998	Supports the development of technology-oriented SMEs by providing risk sharing guarantees and loan guarantees to companies using also venture capital co-financing funds	Equity Guarantee Loans – firms	Venture Capital Funds, technology-orientated SMEs
Styria	<b>AT 11 Regional Initiatives Styria</b>	<a href="http://www.sfg.co.at">www.sfg.co.at</a>	1997	Grants and participation for the setting up and development of SMEs. The scheme provides in particular a "silent participation" of up to 75% of eligible costs (max €728,000) over 5 to 10 years.	Grants – firms Equity – firms	SMEs/Industrial SMEs
Voralberg	<b>AT 12 Saving for the creation of an enterprise</b>	<a href="http://www.vorarlberg.at">www.vorarlberg.at</a>	1997	A guarantee to up to 50% of equity investment in enterprises with growth potential in international markets. Duration up to 5 years Max €1.8 Million	Early stage financing Guarantee – firms	Enterprises located in Vorarlberg with innovative products and services and potential for growth
Lower Austria	<b>AT 13 Young Entrepreneurs Programme</b>	<a href="http://www.ooe.gv.at/foerderung/wirtschaft/index.htm">www.ooe.gv.at/foerderung/wirtschaft/index.htm</a>	1995	Supports the costs of external consultancy in connection with the formation of new enterprises. The max. support up to €1,090. Supports SMEs to strengthen their equity capital base. 72,000 to €363,000 participation between 10 and 20 years.	Consultancy services Equity Firms Early stage financing	Individuals SMEs/Industrial SMEs
Lower Austria	<b>AT 14 Lower Austria participation model, business start-ups</b>	<a href="http://www.noel.gv.at/service/wst/wst2/index.htm">www.noel.gv.at/service/wst/wst2/index.htm</a>		Financial participation and subsidies for existing companies and start-ups in Lower Austria	Equity – firms Interest subsidy – firms	Start-ups; innovative enterprises
Carinthia	<b>AT 15 Equity Capital guarantee scheme</b>		1998	Guarantees equity holding in SMEs for minority participation in cash and for a minimum of 10 years. Maximum guarantee offered by the Carinthian Government up to 100% .	Equity Guarantee	SMEs and investors

The measures highlighted in bold have been added since the last version

<i>Coverage</i>	<i>Measures</i>	<i>Website</i>	<i>Date</i>	<i>Content Summary</i>	<i>Mode of operation</i>	<i>Targets</i>
Austria	AT 16 Technologiemarketing Austria (TecMa)	<a href="http://www.innovation.co.at">www.innovation.co.at</a>	1998	TecMa locates industrial partners, provides financial assistance during the patenting phase and offers consulting services with regard to the exploration of R&D results.	Consultancy services Early stage financing	Scientists at universities and research institutions; private inventors
Vienna	AT 24 Vienna Science and Technology Park TechGate	<a href="http://www.magwien.gv.at">www.magwien.gv.at</a>	1999	Park targeted to technology-orientated industrial enterprises which work in “urban technologies of the 21st century” (mainly telecommunication, energy, transport, health or building industry), research institutions	Science and technology park	Technology-orientated industrial enterprises which work in “urban technologies of the 21st century” (mainly telecommunication, energy, transport, health or building industry), research institutions
Austria	AT 29 ERP Special Programme on Growth and Technology	<a href="http://www.erp-fonds.gv.at/erp">www.erp-fonds.gv.at/erp</a>	1997	A loan granted for 5 years at 0.5% between €363.000 and €14.5 Mio. The borrower has to raise equity capital for at least the amount of a loan. If he fails to find an investor or raise capital at the stock exchange the loan has to be repaid at 120%.	Loan – firms	start-ups
Austria	<b>AT 47 Start-up of technology-based companies Co-operation Research/ Universities/Companies</b>	<a href="http://www.tig.or.at">http://www.tig.or.at</a>	-	Networks of regional partners (universities, research centres, regional support agencies, firms, qualification agencies etc.) compete for national support on the basis of their specific models of start up centres  A plus B centres are financially supported for a period of 10 years. Evaluations take place in the 3rd and the 6th year after foundation and a yearly report is obligatory.		Graduates Research Institutes Researchers Universities
Flanders	BE 18 University and Higher Education Institute Interfaces	<a href="http://www.iwt.be">Www.iwt.be</a>	1998	Promotion of the collaboration between university and enterprises - Promotion of economic valorisation of research and the setting up of spin-off companies. Delivered by the AWI, the regional administration in charge of technology and innovation. The co-ordination between the interfaces is assigned to IWT.	University spin offs	University and high-school interface services
Flanders	BE 27 Incubators and Innovation Centres		1997	The Flemish government supports the establishment of innovation centres and incubators, located in research and scientific parks or in an university campus with the aim of fostering the creation of spin-off companies.	University spin-offs Incubators	
Wallonia	BE 37 FIRST “Spin-off/ Training and Impulse for Scientific and Technological Research”		1994	The Walloon Region takes in charge the salary costs of a researcher, delivers a subsidy to the research laboratory and takes in charge the costs of the necessary training for the researcher to carry out research in a spin-off company.	Early stage financing University spin-offs	<i>universities and HEI</i>
Wallonia	BE 51 Business Innovation Centres	<a href="http://www.heracles.be">Www.heracles.be</a>		They provide a wide range of services for the creation and development of enterprises, including access to financing, promotion of innovation and technology transfer, spin-off projects from enterprises and laboratories.	Incubator	

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Denmark	DK 2 Equity Guarantee Programme		1994	Selected venture capital companies to receive a 50% guarantee on investments made in emerging growth companies, on a case by case basis (from seed/start-up stage to a later developmental stage)	Equity guarantee	
Denmark	DK 4 Innovationsmiljøer” – Technology incubators		1997	6 technology incubators situated at universities or science/research parks to bridge research environments, innovative entrepreneurs and finance companies. They offer state-financed seed-capital, counselling and training, premises and administrative services.	Incubators Intermediation	SMEs/Industrial SMEs
Denmark	DK 8 Approved Technological Service Institutes (GTS-institutes)	<a href="http://www.efs.dk">Www.efs.dk</a>	1996	Supports and promote innovation within business and industry by collecting, developing and creating new advanced knowledge and by ensuring that companies have access to advice and knowledge transfer through . 14 approved technological institutes.	Consultancy services	Large Companies/Large Industrial Companies Other Public Authorities/Organisations SMEs/Industrial SMEs
Finland	FI 1 SPINNO - A business incubator scheme.	<a href="http://www.spinno.fi">Www.spinno.fi</a>	1990	Training, a combination of government grants and other methods of support (technical, etc.), Venture capital available through SPINNO-seed Ltd, external consultants and experts on a limited basis, legal services, a support and advisory programme, accommodation in one of the science parks of the area. Up to 2 years of leave of absence can be granted to the researchers wishing to start a new company. Flexible rules for the transfer and payment of intellectual property rights.	Incubator	Graduates Other Researchers
Finland	FI 6 TULI scheme	<a href="http://www.tekes.fi">www.tekes.fi</a>	1993	The aim is to transfer commercially potential results of research projects towards commercialisation and new ventures. Regional TULI-projects are run by local technology transfer companies.	University Spin-offs	Managers Research Institutes Universities
France	FR 1 Support for innovation	<a href="http://www.anvar.fr">www.anvar.fr</a>	1979	Provision of finance and expertise (IPR - Market studies, research of partners, setting-up of European project, Acquisition or selling of technologies, setting-up of prototypes, preparation of industrial launch, preparation for the introduction to the stock market) to newly created start-ups, entrepreneurs, laboratories or SME’s planning an innovative project with high technology content.	Consultancy services	Other Research Institutes SMEs/Industrial SMEs
France	FR 11 National competition for creation of new technology-based firms	<a href="http://www.education.gouv.fr/creation">www.education.gouv.fr/creation</a>	1999	Selected projects can receive a) financial assistance for the preparation of business plan, market studies, access to external competencies, b) assistance after the creation of the company and from a financing of a part of the development from 12 to 36 months.	Consultancy services Early stage financing	Individuals

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France	FR 12 Creation of regional incubators structures	<a href="http://www.education.gouv.fr/technologie/mesur/incub.htm">www.education.gouv.fr/technologie/mesur/incub.htm</a> <a href="http://www.education.gouv.fr/technologie/mesur/assemnat.htm">www.education.gouv.fr/technologie/mesur/assemnat.htm</a>	1999	The structures will have to detect and evaluate projects, support the elaboration of the project (management, organisation, juridical or commercial support, recruitment, information and clustering). They will receive a subvention of 50% for three years with a minimum objective of supporting 15 projects of creation of innovative firms.	Incubators	Research Institutes Universities
France	FR 13 Support for the creation of seed capital funds	<a href="http://www.education.gouv.fr/technologie/mesur/incub5b.htm">www.education.gouv.fr/technologie/mesur/incub5b.htm</a>	1999	Creation of seed capital funds on major areas of technology with a partnership of public research institutions and private investors. Development through regional incubators regional funds to invest 75% of its funds in firms linked with public research.	Equity – Investors	Research Institutes
Germany	DE 12 BTU- Investment Capital for small and medium sized companies		1995	Mobilisation of up with DM6 million (with a co investor) to finance R&D expenditures, changes in existing technology or marketing.	Equity – firms Equity Guarantee	SMEs/Industrial SMEs
Germany New länder	DE 20 FUTOUR	<a href="http://www.vdivde-it.de">www.vdivde-it.de</a>	1997	Subsidies , venture capital, consulting and technical support towards financing and implementation of R&D projects up to the market place.. subsidies and venture capital might not exceed €750,000 (up to 90% of project costs) over 10 years.	Loans – firms Equity – firms	SMEs/Industrial SMEs Young, technology-oriented very small firms (not more than 10 employees and not older than 3 years) and start-ups in the New Länder
Germany	DE 21 EXIST Existenzgründer aus Hochschulen Start-ups from colleges and universities	<a href="http://www.bmbf.de">www.bmbf.de</a> <a href="http://www.exist.de">www.exist.de</a>	1998	The BMBF subsidises the winning projects for programmes helping students to set up their companies until the end of 2001 with around DM 45 million.	Early stage financing Spin-offs	Individuals Large Companies/Large Industrial Companies Research Institutes, Researchers
Germany	DE 22 Multimedia Wettbewerb Multimedia Contest	<a href="http://www.bmwi.de/">www.bmwi.de/</a> <a href="http://www.gruenderwettbewerb.de/">www.gruenderwettbewerb.de/</a>	1996	Competition to motivate start-ups in multimedia. The best 20 ideas get DM 20,000, the other 80 concepts selected get DM 10,000. DM 40,000 per start-up may be provided for the development of business plans by professional advisers.	Consultancy services Early stage financing	Individuals SMEs/Industrial SMEs
Germany	DE 38 On-line Academy for New Firm Founders	<a href="http://www.focus.de/existenzgruendung">www.focus.de/existenzgruendung</a> <a href="http://www.focus.de/D/DB/DB39/db39.htm">www.focus.de/D/DB/DB39/db39.htm</a>	2000		Consultancy services	New and recent firm founders in search of resources and assistance with their businesses
Germany	DE 47 INSTI Inventors Clubs	<a href="http://www.insti.de">www.insti.de</a>		Offer a platform for exchanging of experience and advice for inventors and young creative individuals.	Intermediation	Graduates, Researchers Large Companies/Large Industrial Companies, Universities SMEs/Industrial SMEs
Germany	DE 50 Business Angel Network of Germany (BAND)	<a href="http://www.business-angels.de">www.business-angels.de</a>	1998	Provides a platform for contacts between business angels and potential start-ups and young firms. Presentation through Internet, legal aid provided through the network.	Intermediation	Large Companies/Large Industrial Companies Other SMEs/Industrial SMEs

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Coverage	Measures	Website	Date	Content Summary	Mode of operation	Targets
Germany	DE 52 BioProfile/BioProfile	<a href="http://www.fz-juelich.de/beo/beo.htm">www.fz- juelich.de/beo/beo.htm</a>	1999	Competition between regions developing a regional biotechnology concept. Subsidies of up to 50% for co-ordination and R&D projects will be available for the realisation of the concepts in the three winning regions.	Incubators	Large Companies/Large Industrial Companies Research Institutes SMEs/Industrial SMEs
Greece	GR 2 Investment Law – Support for the creation of NTBFs		1990	Clusters grants and other support initiatives for NTBFs giving high priority to the utilisation of cutting edge technologies, " high-tech " services and the application of innovative procedures and production of innovative goods and services.	Grants – firms	Large Companies/Large Industrial Companies SMEs/Industrial SMEs
Greece	GR 14 Support of new entrepreneurs for the establishment of SMEs		1994	Support to productive SMEs in order to improve their competitiveness and access the international market, improve their financial situation and increase employment.	Grants – firms	SMEs/Industrial SMEs
Greece	<b>GR 37 Venture Capital Forum for the New Economy</b>	<a href="http://www.elke.gr">http://www.elke.gr</a>	1999	Exploring the international experience on financial mechanisms for the new technology-based firms, increasing awareness amongst researchers and entrepreneurs and present government initiatives in this area.  Creating a partnering event between venture capital firms on the one side and Greek researchers, entrepreneurs and new technology based firms on the other.	venture capital conference and meetings between the interested parts.	Greek researchers or young companies focusing on innovative technologies Greek or foreign venture capital companies.
Israel	IL 1 Technology incubators		1991	General assistance for entrepreneurs including assistance in obtaining financial resources and raising capital	Incubators Grants – Firms Intermediation	Individuals
Israel	IL 2 INBAL Government guaranteed research and development			Support the Research and Development Funds by purchasing 80% of the shares from any investor wishing to sell its investment.	Guarantee – equity	Individuals, SMEs/Industrial SMEs, Private investors
Israel	IL 3 YOZMA		1991	Draws foreign capital to invest in the Israeli hi-tech industry by co investing in Israel high tech industry either directly or by the creation of new VC funds.	Equity – investor Financial environment	
Italy	<b>IT 23 Reordering of the promotion bodies and establishment of Sviluppo Italia SpA</b>	<a href="http://www.sviluppoitalia.it">www.sviluppoitalia.it</a>	1999	Sviluppo Italia is the national development agency which was created by legislative decree on 9th January 1999 in order to enable Italy to promote its activities and to ensure that the states full potential is known to the international marketplace. Its mission focuses on three areas for this development: regional promotion, investment attraction, development of sectors with a high degree of technology	-	Large Companies/Large Industrial Companies Other Public Authorities/ Organisations Research Institutes SMEs/Industrial SMEs
Italy	IT 26 Agreement Sviluppo Italia-MURST	<a href="http://www.igol.it/igoprojects/higp_it.htm">www.igol.it/igoprojects/higp_it .htm</a> <a href="http://www.sviluppoitalia.it">www.sviluppoitalia.it</a> <a href="http://www.murst.it">www.murst.it</a>	2000	Supports academics to develop and marketing the results of their own research activities. Service are free for the project and start-up phases. Six months and 500 million lire (30% Murst and 70% Sviluppo Italia).	Consultancy services	Graduates ,Research Institutes, Researchers, Universities

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Luxembourg	LU 2 SME Capital-Development Company (CD-PME)	<a href="http://www.snci.lu/CD-PME.htm">www.snci.lu/CD-PME.htm</a>	1998	Public/private joint venture (50/50) providing participating loans up to 25 - 30 million LUF and 2/3 of the total cost of the project.	Equity - Investors	SMEs/Industrial SMEs
Luxembourg	LU 4 Technoport Schlassgoart - start-up incubator	<a href="http://www.technoport.lu">www.technoport.lu</a>	1998	Targeted to existing and future start-up SMEs by offering its infrastructure and an efficient business environment. Companies must be a technology oriented start-up, present a realistic business plan, show synergy with the PRC Henri-Tudor.	Incubator	SMEs/Industrial SMEs
Netherlands	NL 15 Twinning Centres	<a href="http://www.twinning.com">www.twinning.com</a> <a href="http://www.syntens.nl">www.syntens.nl</a>	1998	Provide accommodation and management support (Twinning Network) for Start up firms in the ICT sector. The Twinning Funds, respectively the Seed Fund and Growth Fund offer finance .	Equity - Firms Incubators Early stage financing	Start-up firms in the ICT sector
Netherlands	NL 23 Aunt Agatha scheme		1996	Tax exemptions on revenues (up to €2275) and deduction (up to €227500) on losses for informal investors to invest in new companies (up to eight years old) or funds investing in such companies.	Taxation – investors	Business angels, informal investors and new entrepreneurial firms
Netherlands	NL 24 Life Science Action Plan	<a href="http://www.syntens.nl">www.syntens.nl</a>	2000	Creation of a Platform Life Sciences Platform aiming to encourage start up and growth of Life Science firms, a seed capital fund, Incubators, Equipment fund and a Start-up participation fund.	Incubator Early Stage finance Equity firms	Public Authorities/Organisations, Research Institutes, Researchers, Universities
Netherlands	<b>NL 32 Techno-Starter Platform - Dreamstart</b>		2000	Financial means made available by the Ministry of Economic Affairs	Early stage finance	Start-up firms
Norway	NO 09 Project Development Funds	<a href="http://www.snd.no">www.snd.no</a>	1999	Grants given to support researchers and innovators in developing projects and ideas into plans that can attract potential investors. ICT is given high priority.	Early Stage finance	Managers , Researchers
Norway	NO 11 FORNY – Science and technology based Innovation)	<a href="http://www.program.forskingsradet.no/forny">www.program.forskingsradet.no/forny</a>	1994 renewed 1999	Improves the ability to commercialise research-based business concepts. The funding is used on the commercialisation, not on the development of the product	Early Stage finance	Graduates, Researchers, Individuals, Research Institutes , Universities
Norway	NO 19 Municipal Business Development Funds		1997	Funds administered by city councils and distributed both as grants and loans to support start up of new companies, and further development of existing ones.	Early stage finance	Public Authorities/Organisations
Norway	NO 24 Grant for Entrepreneurs (Start-up Grants) .			May be used to cover living expenses, consultancy services, travel expenses, guardian schemes and other follow-up services, minor investment, market surveys and costs associated with start-up operations.	Early stage finance Grants - Firms	Entrepreneurs, particularly in the regional areas
Portugal	<b>PT 16 Promotion of company development</b>	<a href="http://www.icep.pt">www.icep.pt</a>	2000	To strengthen and stimulate investments to enhance company competitiveness	Reimbursable loans at zero interest; non reimbursable grants; achievement premiums	Large companies SMEs
Sweden	SE 5 Simplified registration of start-ups		2000	Common registration form.	Administrative simplification	New companies, implicitly SMEs

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Spain	ES 17 Development of technical Research (PROFIT)	<a href="http://www.mcyt.es/">www.mcyt.es/</a>	2000	Subsidies to R&D, technology centres and companies to carry out technology transfer and innovation activities	Grants – intermediaries	Large Companies/Large Industrial Companies , Public Authorities/ Organisations, Research Institutes, SMEs/Industrial SMEs
Spain	ES 19 The Information society for all	<a href="http://www.mcyt.es/">www.mcyt.es/</a>	2000	Subsidies (including equity provision in firms) to promote the use of information society in companies	Grants – firms	Individuals , Public Authorities/Organisations, Researchers, Students in upper secondary schools
UK	UK 2 Liaison at Ministerial and Official Level with Private Sector Providers of Finance			To enhance among private finance providers the understanding of the needs of innovative SMEs and how to match them. To improve the business skills of SMEs and to ease their access to appropriate finance	Financial environment	SMEs/Industrial SMEs
UK	UK 5 Biotechnology Mentoring and Incubator (BMI) Challenge		1996	To stimulate the start-up of new high quality biotechnology companies which will contribute to the growth of the UK biotechnology industry. A competition to encourage intermediary organisations to support such start-ups through the provision of grants.	Grants – intermediaries Financial Environment	Large Companies/Large Industrial Companies, Public Authorities/ Organisations , Research Institutes, SMEs/Industrial SMEs, Universities
UK	UK 6 Biotechnology Finance Advisory Services		1996	To improve biotechnology SMEs' awareness of, and access to sources of finance, in order to develop the UK biotechnology sector. To identify potential sources of private sector funds or appropriate government grants in all business development phases.	Intermediation	Individuals , Large Companies/Large Industrial Companies , SMEs/Industrial SMEs
UK	UK 8 Small Firms Loan Guarantee Scheme		1981	70 % guarantees on loans from banks and other financial institutions for small businesses with viable business proposals which have tried and failed to obtain a conventional loan because of a lack of security	Loan guarantee	SMEs/Industrial SMEs
UK	UK 21 Science Enterprise Challenge	<a href="http://www.dti.gov.uk/COMMS/dtiexweb/pages/pg05d.htm">www.dti.gov.uk/COMMS/dtiexweb/pages/pg05d.htm</a>	1999	To establish up to eight centres of enterprise in UK universities in order to foster the commercialisation of research and new ideas, stimulate scientific entrepreneurship, and incorporate the teaching of enterprise into the science and engineering curricula.	Incubators	Universities
UK	UK 31 Corporate venturing tax relief	<a href="http://www.inlandrevenue.gov.uk/home.htm">www.inlandrevenue.gov.uk/home.htm</a>	2000	Relief on corporation tax payable by companies at 20% of the amount invested in specific economic activities	Taxation – investors	larger companies wishing to invest in smaller companies.
UK	<b>UK 46 Small Business Research Initiative</b>	<a href="http://www.dti.gov.uk">www.dti.gov.uk</a>	2001	Allow small businesses to R&D procurement from Government Departments	Not yet known	SMEs Industrial SMEs

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### 5.3. Start up of technology based companies

Country	Summary of the country report
Austria	These programmes are especially designed for seed-financing, technology marketing and a young entrepreneur's programme at federal level. Further, the "A plus B" (AT47) programme tries to stimulate the formation of the university spin-off companies.
Belgium	Measures are focusing exclusively on support for the creation and early growth of new technology based firms which are few in number however, actions are targeted explicitly or indirectly to start-ups and spin-offs. These include general support schemes for management and innovation, innovation financing schemes, the support for cluster and technology valleys in Flanders.
Bulgaria	The number of technology-based companies is growing slowly with the exception of the IT sector. The increasing number of business incubators and BICs which offer consultancy, premises at reduced prices, favourable leasing conditions and other related services will help the start-up companies.
Cyprus	Establishment of business incubators.
Denmark	Technology incubator funding is being continued, but the Government sees the scheme as becoming self-financing within three years.
Estonia	On pilot basis, structures for start-ups have been created and candidates identified.
Finland	Today, the Finnish Venture Capital Association consists in 30 full members and some 25 associated members. Domestic development is stressed and financing solutions are particularly geared towards SMEs.
France	The creation of incubators has not progressed. The national contest for innovation project has known a real success for its second edition. Administrative simplification has been set up.
Germany	Access to venture capital to promote technology-based start-ups is strongly supported through several programmes. In 2000, a strong increase in venture capital mobilisation was noticed. 75% of all cases of venture capital involvement in the early phase of high-tech firms are publicly financed. Technology-based start-ups are not only supported by direct subsidies but also by consulting measures.
Greece	New measures aim particularly at NTBF start-ups and academic spin-offs.
Hungary	N/A
Ireland	The Institutes of Technology have a significant role to play in regional development, not least in the creation of spin-off firms. A Business Incubation Centre programme is aimed at expanding the base of high-tech companies. A programme is set up to strengthen the transfer of research results and knowledge to industry through a R&D commercialisation programme.
Italy	The first on-line incubator for technology-based companies was set up.
Latvia	The SME sector utilises the experience of regional higher education institutions, electronics companies to enhance foreign investor and company interest in partnership establishment. A national programme for the development of SMEs was set up to encourage the promotion of innovation and encouragement of participation at all levels in SMEs.
Lithuania	N/A
Luxembourg	Within the framework of the increased promotion of endogenous development, measures in favour of new technological companies are at the forefront of preoccupations.
Netherlands	Policy aims at streamlining the many small initiatives that have been launched by regions, cities, and universities and develop a coherent technology based start-up policy strategy. A Techno-Starter Platform was established to co-ordinate previous and new initiatives for stimulating the start-up of technology-based companies.
Norway	The Science Parks play an important role in encouraging the establishment of new technology-based companies, including university and college spin-offs.
Poland	No specific measures to encourage creation of technology-based companies.
Portugal	Inadequacies in the creation and development of technology-based start-ups. Measures are initiated to improve the above, however, there are no details yet on the exact shape of these initiatives.
Romania	No normative acts to sustain start-ups and incubators.
Slovakia	N/A
Slovenia	No particular measures in place to target the start-up of technology-based companies.
Spain	Measures to finance support for start-up of technology-based firms.
Sweden	Funds received should encourage the return on which they may use to increase commercial benefits from university research and to encourage co-operation between industry and academia, to foster the exploitation of research results.
UK	This particular area remains a key government priority for innovation policy. A new measure; the new Small Business Research Initiative was launched and others were announced.
Czech Republic	N/A

## **5.4. Extracts from Country Reports December 2000**

### **AUSTRIA**

The importance of entrepreneurship has been recognised by Austrian policy makers under the employment aspect. Currently, three programmes at the federal level are especially designed for this purpose: The Seed financing Programme (AT\_3) and the Technology Marketing Austria (TecMa, AT\_16), both in close co-operation, and the Young Entrepreneur's Programme (AT\_12) by BÜRGENS. While the Seed financing Programme and BÜRGENS concentrate on financing, TecMa provides consultation with regard to the commercial exploitation of research results and inventions.

Moreover, financing of start-ups is closely related to other innovation financing schemes: The FFF general programme (AT\_2) and the ERP, namely with the ERP SME Technology Programme (AT\_8), offer favourable terms for start-ups within their programmes. Equity capital guarantees by the FG (AT\_18) and the I<sup>2</sup> programme (AT\_4) are also interesting for technology-orientated start-ups. A strong start-up-aspect can also be found in the Tech Gate Vienna project (AT\_24) which (partly) aims at promoting start-ups emerging from the Vienna universities. Moreover, financing of start-ups is also an important part of initiatives at the provincial level (see AT\_11, 12, 13, 14, 15, 43, 44, 46).

The "A plus B" (academia plus business, AT\_47) programme – managed by TIG - tries to stimulate the formation of university spin-off companies (see 4.4.). Only recently the Chamber of Commerce announced that all inscription fees for start-ups will be abolished in 2001. As these inscription fees were quite significant in some cases the move has significantly reduced the costs associated with the establishment of a new enterprise. This step came as part of a larger effort of the Chamber of Commerce to cut costs, fees for members and to improve services.

### **BELGIUM**

As elsewhere in Europe, the issue of commercialising the results of research through the stimulation of spin-offs from academic or public research; or, the creation of new technology based firms has been placed higher on the political agenda in the last couple of years. For instance, a study has been carried out in 1999 on behalf of the Minister for Science of the French speaking Community on the creation of spin-off companies (copy not yet available).

This said, measures focusing exclusively on support for the creation and early growth of new technology based firms are relatively few in number, however, a series of other actions target explicitly or indirectly start-ups and spin-offs. These include general support schemes for management and innovation; innovation-financing schemes (business angels, etc.); the support for clusters and technology valleys in Flanders.

A first instrument addressing directly the creation of start-ups is public funding in all three regions for the development of incubators. In Flanders, the explicit choice has been made to develop such incubators in partnership with universities and the major public research centres (VIB, IMEC, etc.). In Wallonia and Brussels, the form taken is rather that of the Business Innovation Centre model with a less explicit link to the research base. In most cases, the incubators provide a range of real estate, office management and support services. Certain Universities (e.g. the Catholic University of Louvain and the University of Liege) have created

recently companies whose aim is to encourage and invest in companies resulting from the output of university research.

A new instrument in support of spin-offs was launched in 1999 in Wallonia, the FIRST-Spin-off scheme. Through this measure, the Walloon Region finances the salary of a university researcher during two years as a support for pre-competitive research projects with an industrial finality, aiming at developing a credible valorisation plan, including a technical/commercial feasibility study of the exploitation of the research results. The idea of this scheme is to help bridge the gap between the stage of the idea for a spin-off company (the commercially exploitable research result), and the effective setting up of a viable enterprise.

A second measure in favour of creation of companies by an individual with a patentable idea (support to isolated inventors) has existed for some years and is currently being reviewed with the aim of extending the support to individuals with “novel ideas” for creating new companies. The current scheme will be extended to become a pre-activity grant (“bourses de pré-activité”) for both inventors and individuals with an innovative business idea. The concept was approved by the Walloon Government in May 2000 and is currently going through the legislative process. An interdisciplinary jury will review projects proposed by individuals inventors or around a novel idea in order to assess whether it is possible to develop an economic activity on the basis of the project. The role of the jury will be to filter out only those projects that have a real chance of being viable. The individuals selected will be granted the sum of 12395 EUR (against real costs incurred) in order to allow them to finalise their idea. It is foreseen that the inventors or creators will be able to benefit thereafter from existing aid schemes subsidising consulting services in order to develop a credible business plan.

## **BULGARIA**

The legislative basis for high tech companies is not yet available. Technology-based companies however can be set up under the standard regulations of the Commercial Law. The number of technology-based companies is growing slowly with exception of IT sector. A successful case in this area is Rila Solutions Company, set up a couple of years ago with the financial support of George Soros. The company already employs 110 high qualified software specialists.

The start up of technology-based firms will be facilitated by the improved financing and credit possibilities and reducing administrative procedures. The Encouragement Bank for example opened since October 2000 a start up micro-credits line for up to lev 50,000 (\$24,000) credits with simplified conditions among which is no imperative requirement for business plan. The increasing number of business incubators, business and innovation centres which offer consultancy, premises at reduced prices, favourable leasing conditions and other related services also will help the start up companies

## **CYPRUS**

The first chapter of the New Industrial Policy refers to the promotion of high technology industries in Cyprus through the establishment of incubators. The Government of Cyprus through the Incubators Programmes provides part financing for projects aiming at the development of new high technology products, which will be approved to enter the incubator, up to a period of two years. Applications for such projects may involve the participation of non-Cypriot inventors or scientists. A detailed study on all aspects related to the creation,

organisation and operation of the new agencies has been assigned by the Council of Ministers to a Technical Committee. The Technical Committee prepared a report based on visits to similar establishments in Israel, Ireland and Greece [CY\_5].

In parallel to the above Committee, the Government negotiated with four private companies the setting up and operation of a number of incubators after an exploration of the interest of the private sector to co-operate with the Government in such a venture. The selection was reached through a pre-qualification tender procedure published in the Official Gazette. As a result of this on December the 8<sup>th</sup>, 2000 the Minister of Commerce, Industry and Tourism has signed contract agreements with PROPLAN LTD and CYBER GROUP LTD for the establishment of the first business incubators.

A Scheme for the subsidisation of specialised software in industry was introduced in the framework of the *New Industrial Policy* in 1999. The aim of this scheme is to contribute decisively to the automation of procedures and processes, saving of resources and increase of productivity. This scheme encourages and offers subsidisation towards the cost of the development, purchase and installation of specialised software [CY\_14].

## **THE CZECH REPUBLIC**

Though the state financial support for research and development has continuously increased since 1993 (0.6% of GDP in 2000; 0.7% GDP objective for 2002 laid out by the Czech Government in 1997), the effective tools to evaluate its effects have not been developed yet, because of:

1. Non-unified legal norms and regulations
2. Non-unified digital evidence
3. Lack of information on R&D
4. No co-ordination in terms of introducing, financing and support of the specific programmes

Part of the problems are expected to be solved by the National Programme of Oriented Research and Development, which will be submitted for Government approval by the end of April 2002.

## **DENMARK**

In December 2000 the Minister for Trade and Industry selected 8 Technology Incubators (DK 4) for a new three-year period starting in January 2001. Five of these are 'old' ones from the previous period, namely Østjysk Innovation A/S, Århus; Syddansk Innovation A/S, Odense; HIH Development A/S, Herning; NOVI Innovation A/S, Ålborg and Teknologisk Innovation, Tåstrup. The new are BioVison A/S (focus on biotechnology), CAT-Symbion Innovation A/S and DTU Innovation A/S. De latter two are former operators of Øresund Science Parks A/S.

The Incubators were evaluated in a report published in the beginning of 2000. Here it was underlined that the number of projects/companies that is carried on with private financing is relatively high. The Government therefore wishes to continue the arrangement with a view to they being self-financing in 2004. In the future the arrangement will have to focus more

narrowly on financing research based projects, and ensure that capital is introduced in the projects on an earlier stage than is the case today.

In each of the years 2001 and 2002 the governmental co-financing will amount to DKK 132 million (€18 million). In the following two years the co-financing will be reduced to a mere DKK 50 million (€7 million).

## **ESTONIA**

The Tartu Science Park and the Tallinn Technical University (on a pilot basis) have created the structures for start-ups and identified candidates. The state has just provided financing.

## **FINLAND**

Initiatives aiming at the start-up of technology-based companies primarily relate to the venture capital industry and various incubator schemes. The Finnish venture capital industry has been relatively underdeveloped, but in the 1990s the number of venture capital companies has increased significantly, and today the Finnish Venture Capital Association consists of 30 full members and some 25 associated members (<http://www.fvca.fi>). The most significant public ones are Sitra and Finnvera.

Sitra had a significant role in the establishment of the Venture Capital Association in 1990. Sitra's own activities include technology transfer and venture capital investments in emerging and technology-based start-up companies as well as large company spin-offs. Sitra mainly invests share-capital but other equity-related or complementing forms of finance are also possible. The funds are channelled directly to the companies or through a regional network of partners, which have recently become integrated with Sitra's activities. (<http://www.sitra.fi>) Finnvera's domestic development and financing solutions are particularly geared towards SMEs and help to promote regional policy objectives also (<http://www.finnvera.fi>).

The incubator schemes (FI 1) have been established in close association with the regional technology parks and universities starting from the late 1980s. In the mid-1990s, there were some 15 incubator schemes in Finland. The more significant ones include the Spinno-scheme in the Helsinki region, the technology or company centres in the larger towns of Tampere, Turku and Jyväskylä. Another scheme of relevance is the TULI scheme, which aims at transferring commercially potential results of research projects towards commercialisation, through new ventures and start-ups (FI 6). The TULI-scheme functions on a project basis, also in close association with the regional technology parks and universities. (Ahola & LaPointe 1996.)

## **FRANCE**

The measures related to this subject reflect an important trend in France, even if no new measures have been launched during the period.

The **creation of incubators** (FR12) has not progressed (29 incubators selected in May 2000). It seems that this new measure now needs time to produce its effects (objective to support 860 projects of new enterprises within the next 3 years).

The **national contest for innovation project** (FR 11) has known a real success for its second edition and will be extended in 2001.

The different measures related to **innovation financing** (FR 5, FR 9, FR 13, FR 15, FR 16) also have an important role in helping the creation of technology-based companies. All the measures about the **administrative simplification** have the same objectives.

The national agency for the creation of enterprises ([www.apce.com](http://www.apce.com)) now publishes a monthly survey of the creation of enterprises in France. The survey of October 2000 showed an increase of 5,1% of the creation of new enterprises between January-October 2000 and the same period in 1999. In the ICT sector, a rise of 57% was registered.

## **GERMANY**

The main activities in the field of promoting technology-based start-ups are strongly related to the improvement of financing options, especially the access to venture capital. There are several programmes for promoting start-ups of technology-based companies. The programmes differ in their focus on specific target groups. The most important programme within the promotion programmes of the BMWi is the BTU-programme (DE\_12). Furthermore, the BMWi runs a special programme for technology-based start-ups in the new Länder, FUTOUR (DE\_20). It offers state-subsidy, venture capital, consulting and technical support towards financing and implementation of R&D projects up to the saleable product, process or technological service. The expenditures have to link to the technology-oriented start-up or aim at establishing or enhancing the technological basis of start-up.

It should be emphasised that public programmes have contributed to the explosion of the German venture capital market since 1997. Since the launching of the BTU-programme in 1995, the volume of venture capital mobilised by BTU and other public venture capital measures (FUTOUR, ERP Innovation Programme) has risen from around €90 million to €750 million in 1999. In 2000, a further increase to €1 billion is expected. By the end of 1999, venture capital of more than €1.6 billion (both from public and private sources) had been made available to more than 1,500 small firms and start-ups. It is estimated that roughly 75 per cent of all cases of venture capital involvement in the early phase of high-tech firms in Germany are BTU-financed. At the same time, the number of start-ups in cutting edge technologies, telecommunication and technology-based services (e.g. software) is increasing considerably. Reforming the legal framework (e.g. introduction of the "Neue Markt" at the Frankfurt Stock Exchange) has stimulated the provision of venture capital to technology-based start-ups and makes this option for young researchers much more attractive than it was in the eighties.

The BMBF installed a separate programme for the promotion of start-ups from universities and technical colleges called EXIST (D\_21). The programme has four main objectives: creation of a culture of entrepreneurship in teaching, research and administration at higher-education institutions, increase in the knowledge spill-over into economic value added, transfer of business ideas and entrepreneurial potentials at higher education institutions and public research organisations into real business activities, and increase in the number of innovative enterprise start-ups from universities. The EXIST programme started in December 1997 with the launching of a competition. The aim of the competition was to find the best concepts for achieving the objectives mentioned above by building a network of relevant regional institutions (university, public research organisations, technology transfer, firms, public authorities etc.). To qualify participation, at least three different partners from a region had to work together, including at least one higher education institution. A total of 109 proposals for regional networks were brought to a jury which selected 12 most promising

proposals. In many case of rejected proposals, the participation in the competition was enough to start the process of networking, improving framework conditions and drawing increased attention to new firm formation as a professional option for graduates. Thus, the programme affected university start-ups even in the pre-promotion stage and without spending any public money. This effect was proved by an analysis of 47 regions. In a second round of competition, five proposals were awarded prizes as the best regions (Wuppertal, Karlsruhe, Stuttgart, Ilmenau-Jena, Dresden). These five regions started in December 1998 with the realisation of their network concepts. The approaches, starting conditions and main emphasis of the five regional networks differ widely and reflect the heterogeneity in public higher education and in regional economic structures. Each approach builds on the specific potential in the region and covers very different numbers of participating institutions (from 15 to 60). All networks have central contact agencies which give advice, help establishing contacts between network members and distribute information.

The EXIST programme gives financial support for different purposes: First, the network itself is sponsored by the EXIST funds. Second, scientific support and an on-going evaluation is financed within the programme. Third, country-wide publicity on activities and success within the five networks is a major mechanism for stimulating similar start-up initiatives in other regions. Forth, direct individual support to new firm founders is provided by EXIST-Seed (development of business ideas by students, graduates and faculty members at higher-education institutions with grants to meet their living costs for a maximum of one year, lump sum for advice and start-up preparation). Currently, a new sub-programme called EXIST-HighTEPP started. It is concerned with development options for young high-technology companies in biotechnology and information technology at three universities (Jena, Bamberg, Regensburg). Further supraregional measures are being developed by EXIST and will be open to other networks and regional initiatives, such as incentives for professors to support university-based start-ups, training for lecturers and consultants who give advice to start-up companies, setting up and testing model structures in industrial property rights and a "virtual academy for company founders" for the target group of new media. These measures are always centred on model projects (also outside the five EXIST-networks). The results and lessons learned by the model projects are made available country-wide.

The public funding for EXIST was about €7.5 million per year in the first years (1998-1999). In 2000, funding was doubled to about €15 million annually. The on-going evaluation of the EXIST programme shows that there is a strong demand for start-up related qualification and further education measures in each of the five regions. In some regions, new curricula were introduced especially dealing with new firm foundation. A network analysis in the five region came to the result that in most regions new network connections among the participating actors and institutions had been built up. However, there is no analysis yet of the effectiveness of the programme and of the demonstration effect of the promotion of the five model regions.

For certain fields of technology, there are separate promotion programmes to stimulate new firm formation. In Biotechnology, the BMBF offers the programme "BioChance" (DE\_23), but start-ups are also supported within the BioProfile (DE\_52) contest (but here restricted to those located in one of the three winning regions). The BMWi has launched a Multimedia contest (DE\_22) in 1996 with the goal to increase the number of multimedia firms in Germany by the year 2001 by 100 per cent. In both programmes, start-ups are supported by direct subsidies.

## **GREECE**

The new measures on finance aim particularly at NTBF start-ups and academic spin offs (GR\_37, GR\_39 and GR\_36). Expectations are for 50 NTBFs in the years to come.

## **HUNGARY**

HU\_19 (Integrator) aims to develop Hungarian SMEs' competitiveness and innovative abilities, to build networks and help companies to become the strategic partners / suppliers of large companies.

## **IRELAND**

Within the RTDI measures in the National Development Plan the Institutes of Technology have a significant role to play in regional development, not least in the creation of spin off firms. Incubation Centres are to be supported in these colleges which will be used by researchers to develop business as well as helping firms in the region that are collaborating with the college or institute. The **Business Incubation Centre** programme is aimed at expanding the base of high tech companies operating on college campuses by providing funds to develop and expand incubation space facilities.

## **ISRAEL**

The two main tools for this activity are the Technological Incubators Program (**IL 1**) and the special provisions for start-up companies in The Law for the Encouragement of Industrial R&D – 1984 (**IL 4**).

## **ITALY**

29 November: [dreambay.it](http://dreambay.it), the first on-line incubator for technology-based companies, promoted by Sviluppo Italia, Telecom Italia Lab and Pars ([www.dreambay.it](http://www.dreambay.it)) [IT-23]

## **LATVIA**

Latvian Technology Centre and Latvian Technology Park are the two main organisations in Latvia that have made co-operation between scientific and business communities one of their main areas of activity. Please refer to the previous sections for more details on these organisations.

The Latvian Ministry of Economy has taken the initiative to work out the National Program for the development of SME's. This program was published, discussed and accepted in the first half of 1997. Please refer to section 3.1. Strategic vision of research and development for details on the proposed operational plan.

## **LIECHTENSTEIN**

No new measures

## **LITHUANIA**

No new measures address this objective.

## LUXEMBOURG

Within the framework of the increased promotion of endogenous development, measures in favour of new technological companies are at the forefront of preoccupations.

A first step has been the Technoport Schlassgoart" pilot project for the creation of a first group of technological companies most of which operate in the data processing and communication sectors. This start-up centre, created in 1998, addresses itself to existing and future start-up SMEs by offering its site, office accommodation in an efficient business environment enhanced with timely added value such as secretarial services and internet connection. At the end of this exploratory phase, the model will probably be widened to other business centres incubators whose general pattern (in particular, for accommodation of manufacturing undertakings) will complement that of Technoport Schlassgoart. Requirements of regional balance will also be taken into account (**template LU - 04**).

The second aspect referred to above is the networking of service providers and public advisers (financial, technological, training, logistics and management) through the Luxinnovation GIE (**template LU - 5**), the national agency for innovation and research, that acts as a first-stop-shop for entrepreneurs setting up technological companies.

The third preoccupation relates to the availability of development capital through participating loans of the CD-PME company. (**template LU - 02**).

## THE NETHERLANDS

The support of technology-based start-up companies has for a long time been a weak part of the Dutch policy and S&T system. It was left to the universities to deal with and, with the exception of Twente University, hardly anything was done in a systematic manner to help university start-ups other than offering them office space on university campuses. Some regional policy actors (mainly development agencies, Provinces) took up this issue in the mid-1990s and provided facilities such as offices and venture capital. But since entrepreneurship in universities was not promoted in a big way many of the Science Park type facilities attracted existing businesses more than university start-ups. Consequently the Netherlands scores modestly in its number of high-tech start ups in comparison with other European countries.

It has only been one or two years since government has looked upon this issue as a general policy theme. The Twinning Centre initiative (see NL#15) is the first policy instrument, and the recent 'Industry Letter' (June 1999) is the first White Paper to take up the issue as one of its key points. The immediate policy aim is to co-ordinate and streamline the many small initiatives that have been launched by regions, cities and universities and develop a coherent technology based start-up policy strategy.

The success of the Twinning initiative (NL # 15) will soon cause the government to spin it off to private parties. Twinning has successfully contributed to the dynamics in the market for ICT starters.<sup>1</sup> Accordingly, it has realised its most important objective. The government has set an important wheel in motion. This role can now be left to private organisations. There are two possible future scenarios:

- Twinning will be sold integrally as a "state of the art incubator", or

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<sup>1</sup> This has been established by an evaluation carried out by Booz Allen.

- Strategic investors will take over the share of the government while Twinning will concentrate on innovation clusters and corporate venturing.

The spin-off of Twinning is scheduled to take place before the end of 2001.

Plans have been put forward to expand the Twinning Centre concept to more technology areas. Most concrete example of such plans is the Life Sciences Action Plan (NL#24). The government intends to increase the number of start-ups in this area by stimulating market initiatives and bringing together relevant parties. Meanwhile the start-up fund Life Sciences (fl 23 million for five years) and the seed capital scheme Life Sciences (fl 25 million for five years) have been implemented in August and September 2000, respectively. Besides, the equipment fund has become effective (fl 6 million for five years). Biopartner Nederland has been instituted to co-ordinate the entire Action Plan.

In March 2000, the Minister of Economic Affairs announced the establishment of a Techno-Starters Platform (NL#32). The Platform will act as a foundation that co-ordinates previous and new initiatives for stimulating the start-up of technology-based companies and integrates actors that (are able to) support techno-starters. In August 2000, the Techno-Starters Platform was launched under the symbolic name of 'Dreamstart'. Fl 100 million is available for Dreamstart from 2001 to 2004.

A policy issue that will become more important in institutes of higher education in the near future is the education on 'entrepreneurship'. The AWT has recommended that education should focus on stimulating talent, creativity and entrepreneurship. Measures in this area will be announced in the Policy Paper 'Entrepreneurship in a modern market economy'.

## **NORWAY**

The Science Parks play an important role in encouraging the establishment of new technology-based companies, including university and college spin-offs. They are the local representatives of the FORNY-programme (NO\_11), which is to improving the ability to commercialise research-based business concepts or ideas conceived at universities, colleges and research institutes.

The support to "industrial gardens" (Næringshager, regional incubator parks) will continue under SIVA. Furthermore, SIVA is preparing a new regional program for incubators for industrial newcomers.

The Ministry will continue to allocate money to funds for start ups and the EU programme INTERREG, various programmes for competence development under SND and the Research Council (including NO\_10 BRIDGE and NO\_04 FRAM).

## **POLAND**

Although there were no specific measures to encourage creation of technology-based companies, according to research done by the Economy Chair of Lodz University, in Poland there are about 600-700 small companies based on specialised and advanced technology. The founders of such companies are usually individual inventors and researchers from technical universities and scientific institutes who have built up a specialised knowledge and experience during their professional career and now use it in their firms.

According to the research, the above companies are active in the following sectors:

<b>Sector</b>	<b>% of companies researched</b>
Scientific, medical and optical instruments	27.3%
Biotechnology and pharmaceuticals	23.6%
Advanced materials	18.2%
Computers and telecommunications	18.0%
Industrial electronics	12.7%
Others	0.2%

## **PORTUGAL**

The promotion of entrepreneurship and technology-based entrepreneurship figures high in both POE and POCTI, respectively.

POE has one measure (2.2.) specifically addressed to entrepreneurship – mobilising new ideas and new entrepreneurs. Although not exclusively focussed on technology-based start-ups, this measure will provide support to the creation of new firms by new entrepreneurs. Its implementation will take place in the context of the partnerships and public initiatives framework. This defines the conditions for eligibility of entrepreneurship promotion projects. Support corresponds to non reimbursable grants which may reach 100% of eligible expenditures. Several interesting initiatives may thus emerge in this field.

Under POCTI there is an action specifically oriented towards the creation of incubators for firms launched by young researchers. These would be located close to Universities and S&T institutions. Support will be provided through the allocation of space and the use of common scientific equipment for a defined period. Universities should be involved in the selection of the candidates. This action line has not been implemented so far. Further information will be provided in our next report.

As indicated in the June Report there are two other actions which, though indirectly, may contribute to promote high-tech start-ups. One corresponds to the measure 3.4. of POE (Consolidation and enlargement of company financing mechanisms), which is aimed at stimulating inter alia venture capital activities, thus making easier for high-tech start-ups to have access to funds. The other is the envisaged creation of Centres for Economic Valorisation of Scientific Research (under POCTI), which is expected to give rise to new technology-based firms initiatives.

Still in the context of PEDIP II, Taguspark, the Oeiras based Science and Technology Park, launched two projects concerning the creation and development of high-tech firm in its Company Innovation Centre, and the building up of a competence and co-operation network for SME support. The objective is to promote the creation of new high-tech firms and the provision of support services, including incubators for stimulating the development of companies located in the Park.

Another interesting initiative in the field of technology-based companies promotion was the Conference of NETIE, the Portuguese Association for Information Technology and Electronics. It was an opportunity to discuss the main barriers for the creation and development of companies in those areas. These concern namely the insufficient availability of skilled people, the difficulty in promoting partnership with Universities, a cultural attitude of risk avoidance, and financial and marketing limitations. Meanwhile, NETIE included in its

web site several company success cases which may have a demonstration effect for potential entrepreneurs (See [www.netie.pt](http://www.netie.pt)).

## **ROMANIA**

The objectives for stimulating start-ups of technology-based companies were drawn in subprogram 9 "Excellence Centres" of the RELANSIN. The main goal of this subprogram is to sustain the start-up of incubators and research networks of which activity would reach the European level of quality standards. However, there are currently no normative acts that would be implementing these objectives.

## **SLOVAKIA**

The Slovak Government has not formulated an explicit policy on innovation fostering.

## **SLOVENIA**

No particular measures are in place targeting the start-up of technology based companies, yet the Ministry of Small Business and Tourism is recognising the potential returns of targeting such high-value added sectors. The current framework of the ministry is operative in two parts: The so called "soft" part of the support consisted of setting up an institutional support network of local and regional small business promotion centres and - with the co-operation of Small Business Promotion Centre - the Euro-Info Centre assisting SMEs at their access to European markets. The small business promotion networks is co-ordinated, managed and organised by the Small Business Promotion Centre. Having in mind that the entrepreneurial centres develop from local initiatives, the work is carried out on the basis of the so-called "bottom-up" principle. Local promotion centres provide services such as "one-stop-shop", preparing programmes for local communities, providing training and counselling for entrepreneurs.

The so-called "hard" support provides better access to financial sources. The Small Business Development Fund and individual regional guarantee funds are the main supporting institutions.

## **SPAIN**

The **PROFIT programme (ES-17)** foresees a specific call to support star-up of technology-based firms, so it has been remarked in the June 2000 report. This measure is a novelty in the Spanish innovation policy and its objectives are to finance part of the business plan and the application of start-up funds for these firms, that is, to promote the creation of new technologies-based companies.

The Spanish Government has emphasised that this sort of measures is essential to support these firms and has remarked its interest in them. However, the new mechanism has been delayed to year 2001.

## **SWEDEN**

Since 1994/1995 the commercial exploitation of university research and inventions has been the focus for some new programmes. In 1995 seven Technology Link Foundations (Teknikbrostiftelser) located in seven major university cities, became operational. Together

they received capital of about one billion SEK (115 MEUR), the return on which they may use to increase commercial benefits from university research and to encourage co-operation between industry and academia. The mode of operation in the Technology Link Foundations varies between the different units. They have developed differently depending among other things on the conditions and need in each region.

In 1994-95 eleven University Holding Companies (Holdingbolag) were formed in Sweden. Their mission is to form project companies in order to exploit research from the universities and to develop services for such exploitation. They are themselves owned by the universities and are expected to become minority owners in firms created jointly with researchers and industrial actors for the exploitation of university research.

The Technology Link Foundations in co-operation with the Holding Companies have, in turn, formed Patent & Exploitation Offices (Forskarpatent), which actively support researchers' exploitation efforts. The formation of actors like the Technology Link Foundations and the University Holding Companies as well as the Patent & Exploitation Offices are concrete manifestations of the belief of the political system in the commercial potential of R&D and academic research.

The government will shortly commission an investigation of the activities at the Technology Link Foundations and the University Holding Companies.

## **THE UNITED KINGDOM**

This particular area remains a key Government priority for innovation policy. A number of new measures were announced in the last review period to support this particular goal, adding to the number of existing schemes. These include the Enterprise Fund (UK\_24), corporate venturing tax relief (UK\_31), R&D tax incentives for small and medium companies (UK\_35), the University Challenge scheme (UK\_11) and the new replacement for the HEROBaC scheme (UK\_22) – the Higher Education Innovation Fund (UK\_38).

The Government has also launched a new measure, the new Small Business Research Initiative (SBRI) (UK\_46). This aims to encourage more high-tech small firms to start up, or to develop new research capacity. The scheme was inspired by the US Small Business Innovation Research Fund. Under the scheme, Government departments and the Research Councils will open up R&D procurement programmes (worth up to £1 billion/€1.66 billion) to small firms. The target will be to procure a total of £50 million (€83 million) of research under these programmes from small firms. Participating departments will each aim to procure at least 2.5% of their relevant requirements from small firms. The Research Councils will be encouraged to meet these targets over time.

At a more general level, in order to encourage more entrepreneurs to remain in the UK and to offset the effects of the scientific “brain drain”, the Government, in partnership with the Wolfson Foundation and the Royal Society, will launch a fund to assist in the recruitment of up to 50 leading researchers in key areas of science. This fund will initially be worth £4 million (€6.6 million) a year.