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COMMUNICATION FROM THE COMMISSION

**Implementation of the First
Action Plan on Innovation
in Europe**

Innovation for Growth and Employment

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1. Introduction

Overcoming unemployment involves refusing fixed attitudes and old approaches. This means, above all, giving a new impetus to Europe's capacity for innovation. The question goes well beyond the field of technology. Cultural attitudes, the economic environment, the social context and the educational and legal structures are key factors in the spirit of innovation and enterprise.

Two years ago, the European Commission, with its Green Paper on Innovation, insisted on making this point, which has been accepted by economic and political operators. In particular, the European Councils of Amsterdam and Luxembourg gave an undertaking to stimulate research and innovation in order to help reduce unemployment in Europe.

With the First Action Plan for Innovation in Europe, the Commission has led the way by proposing to mobilise the Community instruments to this end, in particular the Framework Research Programme and the Structural Funds. The Luxembourg European Council on employment extended this mobilisation by giving its support to the European Investment Bank action plan in favour of SMEs, the new technologies, new sectors and trans-European networks. Parliament and the Council have also reached agreement on the establishment of a new budget heading (450 million ecus over the next three years) aimed, in particular, at helping SMEs to create lasting jobs ("European initiative for employment"), in particular through investment in innovation and the use of the new technologies.

The link between innovation, growth and employment thus appears to be characteristic of the modern economies facing international competition whose determining feature is becoming the mastery of skills and know-how. Even if technology is still too often seen at the workplace as a rival to humans and a "job-killer", reality shows that, on the contrary, more jobs are created in countries which invest in education, training, research, innovation and the new technologies.

One year ago, in the Action Plan, the Commission undertook "to take the necessary measures to ensure effective coordination of the measures under the various policies and to reinforce interaction with the Member States" and to draw up a regular report on implementation of the Action Plan, including "proposals for adjustments depending on developments or on the specific contexts to which it will be applied".

With this Communication, the Commission is fulfilling its undertaking and setting out the adjustments it considers necessary, with particular regard to the conclusions drawn from the first phase of implementation.

The First Action Plan called for mobilisation of resolve and energy for its implementation in order to build a Europe which was more innovative and competitive and more able to create jobs. Pursuing this objective remains a priority for the European Union and its citizens.

2. Implementation of the Action Plan has commenced

Implementation has commenced at Community level, and advances have been made in protecting intellectual property rights, financing innovation, administrative simplification (the objective of "*setting up a favourable legal, regulatory and financial environment*¹"), training and education (the objective of "*fostering an innovation culture*") and gearing research to innovation (the objective of "*gearing research more closely to innovation*").

(i) protection of intellectual property

An effective system for protecting intellectual property is indispensable for carrying out innovative activities. It must offer the guarantee that the innovator can derive a legitimate profit from his innovation. It also allows for the widest possible dissemination of new ideas without resorting to secrecy and the retention of technologies. The measures provided for in the Action Plan are aimed at both improving the system of patents and raising the operators' awareness of what is at stake.

THE GREEN PAPER ON THE COMMUNITY PATENT AND THE EUROPEAN PATENT SYSTEM

More than 640 000 inventions are patented each year in the world, compared with 220 000 in the 1960s. This growth can essentially be attributed to Japan and the United States. In this field, Europe shows a disturbing stagnation.

These figures, which are confirmed by the worsening balance of trade in technology, reveal a deterioration in Europe's ability to innovate. They also reveal a degree of dissatisfaction on the part of researchers and businesses with the European system of protection. It is estimated that 2/3 of the 170 000 European SMEs which produce inventions do not apply for patents.

The Action Plan for Innovation identified the causes of this handicap: the European system suffers from a profound weakness. It is simultaneously complex, expensive (despite recent changes) and only relatively effective because of its national fragmentation and the twin tracks of European patent/national patent. Its inadequacies are regularly denounced by its users.

In this field, the European Union must provide its businesses with a legal and regulatory environment which is at least as favourable as that enjoyed by the businesses in the competing geographical areas.

This is why the Commission has launched a large-scale debate with all the operators concerned by adopting the Green Paper on patent on 24/6/97.

On the basis of the results of this consultation, the Commission intends to propose in 1998 an in-depth reform of the European patent system which would lower the costs, reduce the timescales and provide a more certain and consistent legal environment.

BETTER INFORMATION AND AWARENESS OF THE PROTECTION OF INTELLECTUAL PROPERTY AMONGST PARTICIPANTS IN THE FRAMEWORK PROGRAMME OF RESEARCH AND DEVELOPMENT

The Commission is setting up a service for helping and raising awareness amongst those involved in innovation for the protection of intellectual property. Using the Internet and other means (CD-ROM, video, telephone assistance, training sessions), and once operational - which should be in mid-1998 - this service (IPR Help Desk) will provide access to current

¹ The First Action Plan for Innovation in Europe proposes a set of measures grouped around three major objectives: fostering an innovation culture; setting up a legal, regulatory and financial environment conducive to innovation; gearing research more closely to innovation.

legislation and to the state of the art. It will also allow dissemination of best practice in the protection of intellectual property. Finally, it will make novelty searches easier in the case of innovations for which protection is being sought and will help participants in the Framework Programme to implement suitable strategies for protecting their innovations.

ACCESS TO DATA ON PATENTS

Access to information on all European patents is essential for the dissemination of technologies and for encouraging the use of European patents. The Commission has carried out a feasibility study for a single interface allowing such access. On this basis, the European Patent Office has just decided to implement it

PROTECTION OF BIOTECHNOLOGICAL INVENTIONS

Certain rapidly developing sectors, such as biotechnology, require specific measures. In the case of the protection of biotechnological inventions, the Commission has submitted a proposal for a revised Directive which received a favourable opinion from the European Parliament in July 1997 and political agreement from the Internal Market Council in November 1997.

INTELLECTUAL PROPERTY IN THE INFORMATION SOCIETY

On 10 December 1997, the European Commission presented a proposal for a Directive harmonising certain aspects of the rules governing copyright and associated rights in the information society. This proposal is intended to adapt and supplement the current legal framework by placing particular emphasis on new products and services which contain elements impinging on intellectual property (whether they are offered on line or on physical supports such as CD, CD-ROM and other digital videodisks), so as to establish a single market in the field of copyright and associated rights, which protecting and stimulating creativity in innovation in the European Union.

TECHNICAL INVENTIONS

Finally, after the consultation subsequent to the Green Paper on utility models², The Commission proposed a Directive aimed at bringing the Member States' legislation in this field more into line.

(ii) financing innovation

INCREASED AWARENESS OF THE IMPORTANCE OF ACCESS TO INNOVATION FUNDING

The inadequacies in innovation funding are recognised as one of Europe's main weaknesses. Awareness of this challenge is increasing at both national and Community level - as witness the European Parliament's Resolution on the Action plan for Innovation³ and the Resolution of the European Council of June 1997 on growth and employment, calling upon the EIB to look into the setting-up of funding facilities for high-tech projects for SMEs, as well as the conclusions of the extraordinary European Council on employment in Luxembourg. Moreover, in view of the major role of innovation and the need to upgrade and modernise in certain sectors in the Union which are being affected by international competition and

² Utility models are registered rights which grant their owners exclusive protection for technical inventions.

³ EP Resolution 261.934/3

unemployment, the Commission has proposed that innovation aid, in a restricted sense⁴, be accepted in the shipbuilding⁵ and automobile industry⁶ sectors.

The measures under the Action Plan are essentially aimed at attracting private capital (financial markets, venture capital) towards young high-growth businesses and innovative projects in the start-up phase.

THE EUROPEAN CAPITAL MARKETS

As a result of the Directive on financial services, and in order to meet the needs of business and investors, private initiatives were introduced to launch, as from the end of 1996, new European capital markets for innovative high-growth businesses (Euro-New Market, EASDAQ). In 1997, the Commission started work on the conditions and the legal and fiscal frameworks needed to develop these markets, as well as on the necessary back-up measures (with particular reference to training and information⁷). At the request of the heads of State and Government, it will prepare

ATTRACTING VENTURE CAPITAL TO THE INITIAL PHASES OF INNOVATIVE PROJECTS

Under the Innovation Programme, the I-TEC (Innovation and Equity Capital) pilot project, launched in July 1997 in collaboration with the European Investment Fund (EIF), aims to attract venture capital towards the initial phases of innovative high-tech projects. I-TEC helps the managers of venture capital funds to acquire a lasting ability to assess and manage this kind of project. To obtain the Commission's support, the funds must agree to devote at least 25% of their newly-collected capital to early-stage investment in technologically-innovative SMEs. The projects benefiting from the investment must meet at least one of the following two conditions: they must be capable of achieving a commercial application on the basis of R&D work carried out under a Community or national research programme; they must demonstrate a high level of technological innovation in the form of a product, service or process. The first nine funds to benefit from the I-TEC project (accounting for a total investment capacity of ECU 380 million) were selected in November 1997. These funds plan to invest at least ECU 1.5 million in each of the some 150 innovative SMEs making up their portfolios. A second group of beneficiaries will be selected at the start of 1998.

Subsequent to its Decision of 5 November 1997, the Commission is implementing a project to support the creation of joint transnational ventures (JEV). With initial funding of ECU 5 million, this project, which will be administered by a network of financial intermediaries, is aimed particularly at SMEs which took part in Community research with a view to commercial exploitation of the result of the research. Under the initiative for growth and employment, the Commission is planning to propose greater budgetary funding with a view to consolidating this new project.

Apart from these mechanisms, the strong impulse given by the European Councils in Amsterdam and Luxembourg to innovation financing should, with the agreement of the European Parliament, allow considerable resources to be released with a view to developing - in particular within the framework of the ETF (European Technology Facility) and the ASAP

⁴ From the point of view of state aid, aid for innovation poses particular problems, since the nature of the activity may be close to the market.

⁵ Commission proposal for a Council Regulation amending Regulation 3094/95, thereby further prolonging the relevant provisions of the Seventh Council Directive on aid to shipbuilding (COM(97)469)

⁶ Community framework for State aid to the motor vehicle industry.

⁷ The necessary back-up measures were set out in a study produced by the European Information Monitoring System (EIMS) ("Making markets work", G. Bannock 1997).

(Amsterdam Special Action Plan) set up by the EIB with the EIF - Europe's capacity for providing equity for innovative and high-technology businesses.

PROMOTING MEETINGS BETWEEN INVESTORS AND BUSINESSMEN

Set up under the Innovation Programme, the LIFT (Links to Innovation Financing for Technology) project aims to bring together investors and promoters of technology projects, in particular those deriving from Community research. In its exploitation phase (as from mid-1998), LIFT will make available to users a central Help Desk and a decentralised network based on existing bodies and accessible to researchers, businessmen and investors. Through a series of investment forums, meetings between investors and businessmen have also been held in 1997 under the Innovation and BRITE-EURAM programmes, as well as under the programmes concerning information and communications technologies (ESPRIT, ACTS, Telematic Applications). Potential investors were presented with promising technological projects selected on the basis of their innovative nature and their economic viability. Other meetings between researchers, businessmen and investors have taken place, in particular under the Biotechnology Programme (workshop on the spirit of enterprise in biotechnology in June 1997 in Amsterdam) and the biotechnology and finance forum), and these have stimulated a similar exercise in the field of life sciences. The Commission and the European Association of Securities Dealers (EASD) have recently announced the joint establishment of a "Biotechnology and Finance Forum". This forum should promote the development of links between the scientific and industrial community and financial circles, and hence encourage the development of the European biotechnology industry.

EXCHANGES OF EXPERIENCE AND DISSEMINATION OF BEST PRACTICE IN INNOVATION FINANCING

In addition to these measures, the Commission is organising exchanges of experience and the dissemination of best practice. These exchanges take the form of sectoral workshops (biotechnology, information technology, advanced materials) or of a general nature (Innovation Programme, Paris Round Table on innovation, the creation of businesses and employment - December 1997). They also involve the creation of networks of national operators (e.g. a network for technology rating bringing together innovation agencies and investors in four countries, or a network for the establishment of a seed capital fund for the exploitation of microsystems). Moreover, the Commission, under its measures to promote performance benchmarking in the Union, has launched a pilot project in the field of innovation financing.

(iii) the regulatory framework and administrative simplification

The European Council in Luxembourg highlighted the importance, for employment in Europe, of developing the spirit of enterprise. In this context, simplification of administrative procedures and the establishment of suitable legal forms are essential for undertakings in the Union.

TASK FORCE ON ADMINISTRATIVE SIMPLIFICATION

The excessive complexity of administrative procedures costs European industry between 180 and 230 billion ecus annually, thereby damaging their competitiveness. At the invitation of the Amsterdam European Council, the Commission set up a task force (Business Environment Simplification Task Force - BEST) on administrative simplification. Its mandate is to formulate concrete proposals aimed at improving the quality of legislation and reducing the administrative burden which is hampering the creation and development of European

businesses. The Task Force's proposals will be the subject of a report to the European Council in Cardiff in June 1998. In addition, the Commission is pursuing the SLIM initiative (Simpler Legislation for the Internal Market), launched in 1996⁸. The recommendations of the SLIM working groups have been reported to the internal market Council in November 1997.

By means of sectoral impact studies and workshops for exchanges of experience, the Commission is also developing methodologies for taking greater account of innovation in new regulations.

PROMOTION OF LEGAL FORMS OF ENTERPRISE AT EUROPEAN LEVEL

The adoption, in April 1997, of the Davignon Report on involving workers in the future European Company paves the way for the adoption of the this statute. The Presidency of the Council is striving to reach a political agreement in order to complete this project, which is indispensable for undertakings in the Community, as early as possible in 1998.

At the same time, the Commission is trying to promote the use of the European Economic Interest Grouping (EEIG)⁹ - the only legal instrument currently in existence for transnational cooperation of a Community nature.

The Commission has, for instance, established a database containing an indicative list of EEIGs set up in the Community, with a view to monitoring the sectors and users involved in this type of cooperation. It recently adopted a Communication¹⁰ highlighting the potential advantages of EEIGs in the field of public procurement and programmes financed from public funds. Moreover, under the Third Multiannual Programme for SMEs, the REGIE initiative (European Network of EEIGs), launched in 1995, has fostered the internationalisation of the activities of SMEs through the EEIG structure. The results and the experience gained will be included in a *Practical Guide for EEIGs intended for SMEs*.

Moreover, on the basis of Article 130n of the Treaty on European Union, the Commission is working on a statute for joint enterprises in research and technological development aimed at promoting (in addition to the advantages of the EEIG structure) transnational cooperation in RTD.

(iv) education and training

Investment in know-how, the ability to combine disciplines, developing creativity and the sense of initiative, facilitating social, geographical and professional mobility are the basis of a culture of innovation and the spirit of enterprise.

High priority has therefore been given to projects in the field of education and training, as witness, in particular, the launch of initiatives to promote mobility in the field of sandwich courses and apprenticeships. These training and mobility measures are must also be directed at researchers, managers in business and entrepreneurs, and aim to strengthen the innovation culture in conjunction with projects for the exploitation of research.

INNOVATIVE MEASURES IN FAVOUR OF MOBILITY

The "Erasmus Apprenticeship" initiative gives a trans-European dimension to apprenticeship training. Launched a year ago, it provides for the transnational placement of 70 000

⁸ SLIM brings a new methodology to bear on simplification by bringing together, in small teams, the Member States and users. In its pilot phase in 1996, the teams looked at legislation covering the following subjects: ornamental plants, intrastat and the recognition of diplomas. In its second phase, other fields will be examined: fertilisers, the combined nomenclature for external trade, banking legislation, and VAT.

⁹ Council Regulation (EEC) No 2137/85 of 25/7/85, OJ L 199 of 31/7/85.

¹⁰ OJ C 285 of 20/9/97.

apprentices by 1998. In November 1997 the Commission also approved the EUROPASS-Training initiative to stimulate, in particular, the introduction of sandwich courses into higher vocational education.

LEARNING IN THE INFORMATION SOCIETY

The "Learning in the Information Society" initiative is aimed at making better use of information as a tool for the production, dissemination and exchange of know-how. The measure first of all involved promoting the interconnection of schools via, in particular, the Internet (e.g. the organisation of the 'Netdays Europe' in October 1997). Support is also being given to the emergence of a content industry capable of producing enhanced information (cf. the European competition for the best multimedia educational software held in the second half of 1997).

These measures were accompanied by the establishment, in June 1997, of a multimedia platform on the Internet (*Campus-Voice* server) which allows the dissemination of services with a high added value in the fields of education, training and access to the labour market, including career counselling and information. This service is aimed primarily at Europe's 12 million students in higher education. It also allows interaction between students, teachers and others involved in higher education, in particular undertakings in the technology and multimedia service sectors. The *Campus-Voice* service has already led to the establishment of a partnership between student associations, leading European newspapers and more than 70 universities.

TRAINING RESEARCHERS, PROJECT PROMOTERS AND BUSINESS MANAGERS IN THE INNOVATION PROCESS

In recognition of the importance of training in specific innovation processes and in technological advice to businesses, the Commission is giving its support to the *Form-Inno-Tech* initiative (Training in innovation processes and for technology advisers for businesses). This is aimed at developing a European network of technology assistance centres with both regional and sectoral responsibilities. Starting with Germany, France and Italy, it is planned to extend the project gradually to the other Member States.

In addition, the measures taken under the "Training and Mobility of Researchers" and "Leonardo da Vinci" programmes have led to increased mobility of researchers between research institutes, training centres and industry.

By exploiting the synergy between the two programmes, the *Train-Re-Tech* (*Training in Research and Technology Transfer in Businesses*) project is helping to provide young European researchers with the skills required in the labour market. It also provides training for the trainers in the field of educational tools and the new technologies.

It is based on prior experience and comprises 24 projects under the Leonardo programme which have led to more than 300 exchanges. In addition, some 1 000 researchers have been in contact with industrial circles through the "Training and Mobility of Researchers" programme, and nearly 300 grants have gone to researchers undergoing training with an industrial component.

This measure will be continued under the Fifth Framework Programme and in the future Community education and training programmes. The new horizontal programme "Improving Human Potential" will, in particular, provide support for the establishment of networks of training through research and easier access to major research installations. The *innovation* dimension, and in particular training in innovation and technology transfer, should be

integrated into future education and training programmes in line with the guidelines proposed by the Commission in its recent Communication entitled "A knowledge-based Europe"¹¹.

Finally, in close collaboration with the Member States, the Commission is implementing pilot projects for the benchmarking of performance in the field of human resources and the development of skills. The results of these projects will be presented to the Industry Council in November 1998.

(v) gearing research towards innovation

Innovation is also based on research and technological development. In this respect, Europe has four handicaps: insufficient investment in research, fragmentation of efforts, a deficit in identifying the needs of society and emerging markets, and insufficient linkage between research and its applications.

This is why, in its proposals for the Fifth Framework Programme of research and technological development, the Commission was particularly concerned to set out concentrated projects which met clearly-identified objectives and needs.

Taking wide-ranging account of the innovation and specific features of SMEs, the proposal includes, in particular, multidisciplinary key actions geared to targeted applications and incorporates pre-standardisation research. The Commission has taken steps to achieve more effective industrial exploitation of the results obtained by its own programmes (e.g. the setting-up of the PROSOMA service, which allows the industrial impact of the results of the ESPRIT programme to be increased), on the one hand, and by its own research establishments, on the other.

A MORE CONCENTRATED FRAMEWORK PROGRAMME

To make it easier to concentrate the Community's research efforts, the Commission has proposed that the Fifth Framework Programme be organised in seven major programmes - four "thematic" programmes and three "horizontal" programmes - to which must be added a programme concerning the direct actions of the Commission's Joint Research Centre.

The thematic and horizontal programmes are both complementary and linked. To ensure their effectiveness, in particular in terms of the exploitation of results and innovation, it is proposed that the thematic programmes take as much account as possible of the objectives of the "horizontal" programmes

The innovation objective would therefore be fundamental within the thematic programmes. These would include "innovation cells" whose role would be to promote innovation in each of the thematic programmes. The innovation cells would act as the interface with the "Innovation and Participation of SMEs" programme (see below) and would benefit from its support activities, networks and information services.

INNOVATION AND PARTICIPATION OF SMES

The horizontal programme '*Innovation and participation of SMEs*' under the Fifth Framework Programme must, for its part, promote the innovation objective and coordinate the account taken of it in the thematic programmes, while increasing the involvement of SMEs. This will ensure consistency between the measures and methods of the thematic programmes in favour of innovation. The participation of SMEs will be encouraged by introducing incentives such as the "one-stop SME shop", exploratory premiums to make the preparation of applications easier, and cooperative research projects carried out by third parties. Secondly,

¹¹ COM(97)563

the programme will assess and try out best practice in innovation or technology and promote the networking of national or local projects:

In addition, outside the Framework Programme, the Commission is setting up a number of sectoral workshops and networks aimed at increasing SMEs' awareness of what is at stake in industrial innovation.

THE ROLE OF THE KEY ACTIONS FOR RESEARCH AND TECHNOLOGICAL DEVELOPMENT

The key actions represent a major initiative in the draft Fifth Framework Programme. They are linked to economic and social objectives of major importance for the foreseeable future of the Union. The key actions are defined according to problems to be solved and explicitly formulated economic and social objectives. Within the framework of an overall ("systemic") approach, they will mobilise the resources of the different disciplines, technologies and know-hows concerned, as well as the relevant skills from various origins. They will have to cover the entire range of activities necessary for the attainment of their objectives: from basic research to the demonstration stage via development. One of their main objectives is to help to concentrate on their subject the public and private efforts being undertaken in Europe. Finally, they will be prepared and implemented in close cooperation with the scientific community and businesses, and more generally with all those involved in and using research. This formula will allow for greater flexibility in the setting-up of partnerships and in the financing and execution of the work

A NEW GENERATION OF DEMONSTRATION PROJECTS

In accordance with the Action Plan, major demonstration projects (associating technology producers and users, as well as a wider audience) will be conducted under the Key Actions. Thanks to a validation phase which is still distant from the market, they will be a determining element in stimulating the transfer and adoption of the new technologies.

PROMOTING INTEROPERABILITY AND COMPETITIVENESS THROUGH STANDARDISATION

The Commission has adopted a working document aimed at developing pre-standardisation research in order to take into account, sufficiently far upstream, the objective of standardisation in research programmes, so as to ensure the interoperability and competitiveness of new products and services. To this end, it has drawn up guiding principles which are in accordance with European quality promotion policy and on which there is broad agreement. This initiative should allow more rapid dissemination and acceptance of innovations. It thus fits in with the standardisation work being done in the field of the information and communications technologies.

AN INITIATIVE IN FAVOUR OF TECHNOLOGY TRANSFER AT THE JOINT RESEARCH CENTRE

In order to apply the recommendations of the Action Plan to its own research centre, the Commission has decided to launch an initiative aimed at strengthening technology transfers and collaborative research at the Joint Research Centre (JRC). On the basis of a feasibility study carried out in 1997, the following measures are proposed with a view to facilitating access to the installations and expertise of the JRC:

- promoting access to the JRC's establishments by outside undertakings or bodies, so as to encourage collaborative research,
- setting up a technology transfer fund financed by private capital and to be used for supporting businesses in the start-up phase or SMEs exploiting JRC research results,

- creating a virtual technology park making the best use of telecommunications and also allowing access to the expertise of the national research centres,
- setting up an incubator to house new technology-based firms (NTBF), as well as, temporarily, research teams who are cooperating with the JRC,
- developing training for managers in industry in the fields in which the JRC has recognised skills.

The initiative will be implemented gradually, with an evaluation of the results at each intermediate stage. If necessary, pilot projects will be launched prior to large-scale developments.

(vi) strengthened overall coordination

Innovation is a challenge to the Community which concerns all levels of intervention. It is therefore essential to encourage dialogue and to organise the coordination of the policies which depend on it.

ESTABLISHMENT OF MECHANISMS FOR COORDINATING IMPLEMENTATION

Implementation of the Action Plan has allowed strengthened overall coordination of all Community policies relating to innovation under the authority of Mrs Cresson and the supervision of a *Group of Directors-General for Innovation*, whose role is to plan the projects and ensure their coherence.

COORDINATION BETWEEN RTD AND INNOVATION POLICIES AND POLICIES TO PROMOTE ECONOMIC AND SOCIAL COHESION

The Commission is in the process of finalising a Communication entitled "Cohesion, Competitiveness, RTD and Innovation Policy" aimed at implementing an integrated strategy of research, technological development and innovation in the disadvantaged regions of the European Union.

A TREND CHART FOR STRENGTHENED COOPERATION WITH THE MEMBER STATES

Finally, as planned, and together with the Member States, it has undertaken to establish a common reference framework in the field of innovation policies (Trend Chart on innovation performance and policies in Europe). A Group of Senior National Officials has been set up to guide its preparation. The Trend Chart will serve as an instrument for analysing innovation policies and will make it possible to assess the effectiveness of the policies and identify priority options and opportunities for cooperation with the Member States.

3. Priorities for action in 1998

At the Luxembourg employment summit on 20 and 21 November 1997, the heads of State and Government solemnly confirmed the diagnosis of the need to stimulate research, innovation and the spirit of enterprise in order to help to reduce unemployment in Europe.

Continued implementation of the Action Plan for Innovation adopted one year ago will therefore remain one of the Commission's highest priorities, in particular in the fields of:

- intellectual property;

- access to financing (initiatives to promote investment in venture capital and the creation of high-technology firms with the help of the EIB and EIF, as well as actions to facilitate access to seed capital¹²).
- administrative simplification
- developing the spirit of enterprise (Group of Commissioners on SMEs).

Finally, the Group of Directors-General for Innovation will take steps to ensure, in the light of the timetable drawn up by the Commission, that the other measures announced in the Action Plan, and which are essential for innovation in Europe, are implemented, and that these measures take account of the objectives of Agenda 2000, in particular enlargement and sustainable development.

This year will also be devoted to taking developments in the socio-economic and technological context into account in innovation policies.

With that objective in mind, the emphasis will be put on actions aiming at:

- mobilising Member states and the actors concerned, in particular through their participation in the elaboration of the innovation Trend-chart
- fostering the creation, the development and growth of companies, in particular of those based on new technologies (this could include the dissemination of good practice, the constitution of networks or pilot projects, within the framework of existing budgets or planned)
- encouraging new production and trading patterns (virtual or "network" companies, clusters, electronic trade)
- support the professionalisation of innovation support specialists, in particular through training, in the areas of technology brokerage, technology transfer and financial analysis of technology stocks;
- facilitate the interconnection or, whenever necessary, the setting up of private and/or public networks to support and advise firms in the area of technology, marketing, management, information and finance.

¹² After the implementation of the "seed capital" pilot project under the third multiannual programme in favour of SMEs, which created 280 innovative undertakings, the Commission is planning to launch in 1998 a second project aimed at supporting the development of the young seed capital industry.

**Implementation of the First
Action Plan for Innovation
in Europe**

Information sheets on the actions

Information sheets on the actions

- 1. Protection of intellectual property**
 - 1.1. Green Paper on patents
 - 1.2. IPR Help Desk

- 2. Innovation financing**
 - 2.1. I-TEC pilot project
 - 2.2. LIFT project
 - 2.3. Entrepreneurship and access to financing for advanced technologies

- 3. The regulatory framework and administrative simplification**
 - 3.1. Communication on the participation of EEIGs in public contracts and programmes financed by public funds
 - 3.2. REGIE action

- 4. Education and training**
 - 4.1. Campus Voice
 - 4.2. Form-Inno-Tech
 - 4.3. Train-Re-Tech

- 5. Gearing research to innovation**
 - 5.1. Key Actions on research and technology development
 - 5.2. Integrating SMEs in the EC RTD Framework Programme
 - 5.3. Improved gearing of research to standardisation
 - 5.4. PROSOMA Esprit
 - 5.5. Technology transfer initiative at JRC

- 6. Strengthened overall coordination**
 - 6.1. Trend chart on innovation in Europe
 - 6.2. Benchmarking framework conditions for the competitiveness of European industry

1 Protection of intellectual property.

Sheet 1.1. Green Paper on patents

Title of the action

“Promoting innovation through patents”- Green Paper of the Commission on the Community Patent and the Patent System in Europe (COM (97) 314 final).

OBJECTIVES/TARGET POPULATION/ANTICIPATED IMPACT

- **Objectives:** to consult the interested parties and the other Community institutions on the need for a new action plan by the Community relating to the Community patent, and on the need for further harmonisation of certain aspects of patent law (computer programs, employees' inventions, the use of patent agents, etc.) at Community level.
- **Target population:** industry (large concerns and SMEs), patent agents, lawyers, patent offices and the competent authorities in the Member States
- **Anticipated impact:** clear demonstration of the need for a Community patent in order to provide a single system of protection throughout the Community.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

- **Main lines:** there is a suggestion to transform the 1975 Luxembourg Convention on the Community patent (which was never applied) into a Community Regulation. With regard to other aspects of the patent law, it has been suggested that one or several directives be proposed aimed at harmonising national legislation on computer programs, employees' inventions and the use of patent agents.
- **Innovation component:** this is obvious; the patent is the method par excellence for obtaining exclusive commercial rights to an invention for a limited period; the burden is on the inventor to divulge all relevant technical information in full.

TIMETABLE AND PROCEDURES FOR IMPLEMENTATION

Adoption of the Green Paper by the Commission: 24 June 1997 - A hearing of interested parties in Luxembourg on 25 and 26 November 1997 - Discussions in the European Parliament: September to November 1997 - Commission decision on the appropriate follow-up: beginning of 1998.

COMMUNITY ADDED VALUE, OR RESULT OF THE IMPLEMENTATION OF THE ACTION AS AN INTEGRAL PART OF THE ACTION PLAN FOR INNOVATION

The expected results can only be achieved by legislative action at Community level. This should make the European patent system less expensive and easier to use while providing greater legal security for enterprises.

RESULTS OBTAINED/ REVIEW

Consultation on the Green Paper was terminated at the end of November 1997. The Commission will present proposals for reform at the beginning of 1998

1 Protection of intellectual property.

Sheet 1.2 : IPR Help Desk

TITLE OF ACTION

Intellectual Property Right (IPR) Help desk

OBJECTIVES/TARGET POPULATION/IMPACTS EXPECTED

The objectives of the IPR Help desk activity are:

- to raise awareness in Europe for the use of the patent system and for intellectual property rights aspects in innovation processes;
- to facilitate access to the various sources of information on IPR and to promote technical and patent data searches in order to define the technical state of the art before commencing any RTD activities;
- to offer useful tools for technology transfer and technology exploitation activities, in particular for EU-RTD project participants.

The beneficiaries of the IPR Helpdesk will be : participants in the EU-RTD projects, innovative SMEs, new technology based firms, business start ups.

Expected impact:

A study of the European Patent Office showed that two thirds of enterprises generating inventions do not use the patent system at all. The expected impact of the IPR Helpdesk should be a much greater awareness and better use of the patent system by facilitating access to various sources of information on Intellectual Property Rights and by providing tools for technology transfer and technology exploitation. Recently US and Japanese initiatives on patent information policy have been established or are being implemented, also using the Internet as a new media. Europe will have to react to these initiatives and provide Europe's research community with a European alternative.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

The IPR Helpdesk activity aims at giving comprehensive information on how to protect and exploit Community research and will combine a website and helpline informational services. More customised help with IPR aspects will be provided to contractors in all Community RTD programmes. Direct access to some patent databases might be included. The services will be mainly informative and not advisory. It will always ultimately advise to seek professional help and will not replace the help available from patent offices, patent agents and lawyers.

CALENDAR AND MODALITIES FOR IMPLEMENTATION

Following the recommendations of a study, a Call for Tenders should take place at the beginning of 1998. The Call concerns the provision of external services necessary to implement the IPR Helpdesk activity. The IPR Helpdesk should be operational by July of 1998.

COMMUNITY ADDED VALUE

Presently there is no comprehensive information service at a European level on intellectual property rights issues in innovation processes. By unfolding information along a storyline, the basic stages of innovation activities will be represented in a multilingual framework, thus addressing the linguistic needs of innovative enterprises all over Europe. The use of patent systems and patent information databases should be harmonised within Europe.

RESULTS OBTAINED/REVIEW

A Call for Tenders will be published at the beginning of 1998.

2. Innovation financing.

Sheet 2.1 : I-TEC Pilot Project

Title of the action

I-TEC pilot project (Innovation and Technology Equity Capital) carried out in cooperation with the European Investment Fund (EIF).

OBJECTIVES/TARGET POPULATION /ANTICIPATED IMPACT

The objective of the action is to attract private venture capital to invest in the initial phases of innovative high-tech projects and in enterprises with high growth potential.

The beneficiaries of this action are technologically innovative SMEs, in particular those taking part in Community research and technological development (RTD) programmes, and also venture capital funds.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

- To facilitate early investment in technologically innovative SMEs, the I-TEC project helps to finance the initial assessment and active management costs which have to be borne by the venture capital investors.
- It is open to European venture capital funds selected with the aid of the European Investment Fund which agree to devote a minimum of 25% of their recently acquired capital to early investment in technologically innovative SMEs.
- The I-TEC project assumes a maximum of 50% of the initial assessment and active management costs incurred by such investments. Its maximum contribution through venture capital funds is 5% of the investments made, with a ceiling of ECU 500 000.
- The projects aims to combat the shortage of private capital investment in technologically innovative SMEs, this being one of the main obstacles to innovation in Europe.

TIMETABLE AND PROCEDURES FOR IMPLEMENTATION

- The I-TEC pilot project was launched officially by Mrs Cresson on 1 July 1997. An initial evaluation of results followed by corrective measures where necessary is planned for 1998.
- The terms and conditions for the conduct of the pilot project were set out in the cooperation agreement concluded between the Commission and the EIF. The Commission is also introducing an evaluation mechanism to make it possible to monitor and disseminate the results achieved by the pilot project.
- The EIF acts:
 - by identifying competent managers of venture capital funds who are specialists in early investments in technologies,
 - by evaluating the commercial viability of these funds.
- In return, the I-TEC pilot project helps to strengthen the venture capital markets in which the EIF operates:
 - by providing additional support for the managers of smaller venture capital funds who raise new and increased resources through the confidence it inspires among those private and institutional investors who are investing in such funds for the first time.
- Wherever possible, the EIF invests directly in the funds receiving I-TEC backing.

COMMUNITY ADDED VALUE, OR RESULT OF THE IMPLEMENTATION OF THE ACTION AS AN INTEGRAL PART OF THE ACTION PLAN FOR INNOVATION

The I-TEC pilot project can help to put the results of Community research to better use. It relies on the experience of the private sector without competing with it.

Lastly, it helps to increase EIF focus on investments in the early phases of innovation and technology.

RESULTS OBTAINED/REVIEW

The I-TEC project provides venture capital funds with a sustainable capacity to assess and manage projects. An initial sum of ECU 7.5 million has been allotted to the I-TEC project through the Innovation programme.

At the end of 1997, the first nine venture capital funds with a total investment capacity of ECU 380 million (of which half will be invested in the start-up phases of innovative projects over the next three years) were selected for Community support. These venture capital funds have a total portfolio of more than 150 high-tech SMEs specialised in one of the following fields: information technologies, health/life sciences, materials science, measuring and testing technologies, chemistry. A second group of beneficiaries should be selected at the beginning of 1998.

A network of selected venture capital funds will be established to facilitate contacts with participants in Community research programmes who are seeking external financing.

2. Innovation financing.

Sheet 2.2 : LIFT Project

TITLE OF THE ACTION

Innovation Financing Help Desk

Extended from the LIFT pilot project, initiated under the Fourth Framework Programme

OBJECTIVES/TARGET POPULATION/IMPACTS EXPECTED

Objectives of the Action

- to facilitate access for technologically innovative SMEs in Europe, in particular participants in Community funded RTD, to the instruments which finance innovation and support the creation of innovative enterprises (financial engineering, venture capital) by lowering information and transaction costs,
- to increase the effectiveness of participants in Community RTD programs to exploit research results (in particular in identifying and accessing sources of finance), to reinforce mechanisms designed to ensure this better exploitation of programme results, and to rationalise and coordinate at Community level the operation of networks providing information and assistance, notably on innovation financing,
- to reinforce existing innovation support infrastructure and Community initiatives, to help implement Community innovation policy, notably by adding a European dimension to national innovation financing systems

Beneficiaries of the Action

- direct beneficiaries will be technologically innovative SMEs, and notably participants in Community RTD programmes, through the improvement of the information and support infrastructure for innovation financing in Europe,
- financiers interested in Community RTD programs, and in supporting spin-offs thereof.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

Main facility :

- the Help Desk will operate as a facilitator to interconnect financiers and actors in the field, e.g. participants in Community RTD
- the Help Desk will be operated through a central operator, directly accessible for participants (SMEs) and Commission services, as well as selectively for financiers and national correspondents (eg. Innovation Relay Centres)
- relay to tools/initiatives developed by other Commission services (eg. Euro-Management, Eurotech Data); as well as to their existing networks (eg. Eurotech Capital, ESCFN), and exploit action of synergy with these
- identification (further to a call for the expression of interest) of :
 - financiers and financier networks willing to participate in the Help Desk and to have access to Community funded RTD projects
 - national correspondents for Help Desk, to establish the interconnection with national and regional initiatives and/or financier networks
- dissemination of information and services, a.o. using dedicated Internet capabilities

CALENDAR AND MODALITIES FOR IMPLEMENTATION

The Help Desk is expected to be operational by mid 1998.

COMMUNITY ADDED VALUE

- subsidiarity : the project enhances the innovation financing infrastructure by building and interconnecting what is available and providing additional competence
- trans-European dimension (interconnecting national initiatives)
- one of the target groups are participants in Community funded RTD
- programme contributes to the exchange of experience and good practice

RESULTS OBTAINED

- The publication of a Call for Tender for the external operator(s) is planned for January 1998.
- The concept has been presented to financiers and to the Commission services concerned. It has met with their interest.
- Several pilot activities have been launched which have enabled to test the feasibility of the help-desk. They include :
 - investment fora
 - training of project officers (150 projects have participated to date in training sessions)
 - a specific webpage on innovation financing is in preparation to be hosted under CORDIS.

2. Innovation financing.

Sheet 2.3: Entrepreneurship and access to financing for advanced technologies

TITLE OF ACTION

Entrepreneurship and access to financing for advanced technologies

OBJECTIVES/TARGET POPULATION/IMPACTS EXPECTED

- The objective of these activities are to stimulate an entrepreneurial culture and the creation of start-up companies by creating networks between different players in this field, by exchanging views and best practise and by designing specific measures that support the creation of start-ups and technology investments.
- A special target group are small and medium sized enterprises (SMEs) and entrepreneurs from research organisations, that plan to develop and commercialise results from EU-RTD projects.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

- A series of transnational 16 investment fora organised by the INNOVATION PROGRAMME, the last two of which were held in Paris (November 1996) and in Berlin (April 1997). Due to the relative decline in interest from venture capitalists, a new approach based on financing instruments for product innovations is being experimented (for instance, the financing of Microsystems Technologies - MST).
- "Biotechnology Entrepreneurship Workshop" organised by the BIOTECHNOLOGY programme on 27 June 1997, and held in conjunction with the EuropaBio'97 congress in Amsterdam. This workshop gathered together key players in the field: scientific researchers, managers of biotech SMEs, venture capitalists, enterprise incubators and science parks.
- Investment fora organised jointly by the BRITE-EURAM programme and the EUROTECH CAPITAL Network where appropriate EU-RTD projects from the BRITE-EURAM programme have been selected for presentation to venture capital managers.
- The Paris Round Table of 9th December 1997 (and ensuing developments) on "innovation, the creation of businesses and jobs". The objective of the Round Table is to launch an in depth consultation process on ways to foster the creation and growth of technology based firms. It has involved high tech company managers, financiers, policy-makers, university research centres managers, as well as Member States and Community officials.

CALENDAR AND MODALITIES FOR IMPLEMENTATION

The following initiatives have been taken or are planned...

... within the INNOVATION programme :

- 16 transnational fora to date
- Strategies and financing models are being developed for MST companies with close collaboration of venture capitalists.
- A consultation process on the creation and the development of hi-tech firms (Paris Round Table, working groups; conference in Luxembourg in May 1998; European hi-tech entrepreneurs forum in Vienna in autumn 1998).

... within the BIOTECHNOLOGY programme:

- 3 workshops in summer 1997 in Italy, and the Netherlands
- Biotechnology and Finance Forum, March 1998, Brussels

... within the BRITE-EURAM programme :

- EUROTECH CAPITAL network meeting in December 96 (Rome) and June 97 (Stockholm)
- Two further meetings in 1998

...within the ESPRIT programme :

- EITC '97 investment forum organised in November 97

COMMUNITY ADDED VALUE

Entrepreneurship and financing of innovation require the integration of knowledge, competence and experience in scientific research, business management, and financing. Transnational co-operation is necessary especially in those cases where there are no players in one or more of the above fields in one single country. The European added value is clearly to widen the local, regional, national scopes to the entire European scene, so that networks combining the most appropriate players are established.

RESULTS OBTAINED

- The investment fora of the INNOVATION Programme have enabled 500 innovative SMEs to prepare and to present themselves to selected financiers and venture capital managers. 2/3 of these SMEs have reportedly found an investor and/or business partner within 6 months of participating in an investment forum. A series of training seminars were also organised by the INNOVATION Programme, with the participation of 150 Project Officers from the Community research programmes.
- The investment fora organised by the BRITE-EURAM programme has led to investment presentations of eleven projects, selected out of 50 finished projects that had been rated highly successful. Although already 5 out of these 11 presentations led to negotiations with VC financiers, it is planned to further enhance this quota by a better pre-selection of projects and support for presentation of business cases in the upcoming meetings. The final results will also provide input for the design of possible accompanying measures or specific projects that support access to financing of innovation and entrepreneurship.
- As a result of the activities of the BIOTECHNOLOGY programme, the EASD (European Association of Security Dealers) and DGXII-E (Life Sciences) have embarked in the organisation of a "Biotechnology and Finance Forum" which will support discussions and encourage co-operation between the "Biotech sphere" (scientific researchers, enterprise incubators, biotech companies) and the "Financial sphere" (venture capital firms, investment banks, institutional investors). The first two initiatives of the Biotechnology and Finance Forum will be:
 - the completion of Biotechnology and Finance survey to examine the financial needs of the "Biotech sphere"
 - the organisation of the first meeting of the Biotechnology and Finance Forum, early in 1998.
- More than 100 key European actors have participated in the Paris Round Table on "Innovation, the creation of businesses and jobs". Three working groups have been set up in order to further refine proposals for action which came out from the Round Table.

3. The regulatory framework and administrative simplification.

Sheet 3.1 : Communication on EEIGs

TITLE OF ACTION

Communication from the Commission on the participation of European economic interest groupings in public contracts and programmes financed by public funds¹

OBJECTIVES/TARGET POPULATION/IMPACT EXPECTED

In an ongoing effort to promote the use of EEIGs, this Communication was adopted at the initiative of Mr Monti, in agreement with Mr Papoutsis.

The objective of this Communication, which is addressed to all current and potential users of EEIGs and to the various authorities and institutions who may have to deal with an EEIG, is to ensure that the EEIG can tender on an equal footing with other firms for public contracts and participate fully in programmes financed by public funds. The Communication should, in the long term, dispel any uncertainty which might impede the optimum use of EEIGs in these fields.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

The Communication highlights the potential benefits to be drawn from EEIGs and clarifies their situation as regard programmes financed by public funds, in particular the Community funded research programmes.

TIMETABLE AND DETAILS OF IMPLEMENTATION

The Communication was adopted by the Commission on 9 September 1997 and published in the Official Journal of the European Communities.

It does not require any implementation.

COMMUNITY ADDED VALUE

The EEIG is undeniably a trump card compared with other forms of partnership, since it is currently the only vehicle for transnational cooperation directly connected with the Community system and, while possessing full legal capacity, it leaves its members with total legal and economic independence in the conduct of their own activities. Moreover, the considerable synergy between its partners enables them to participate in a large number of projects in the field of innovation, in particular through association with the private and public sectors.

RESULTS OBTAINED

There appears to be a widespread awareness amongst interested parties since the publication of this Communication.

¹ OJ No C 285 of 20 September 1997, p.17.

3. The regulatory framework and administrative simplification.

Sheet 3.2 : REGIE Action

TITLE OF ACTION

REGIE Action (European network of European Economic Interest Groupings - EEIGs)

OBJECTIVES/TARGET POPULATION/ ANTICIPATED IMPACT

Promotion of the EEIG amongst SMEs

Impact: internationalisation of the activities of SMEs through the legal structure of the EEIG

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

- Improving information on the EEIG;
- Reviewing the differing practices in the use of the EEIG

Innovation component: the EEIG is an instrument for partnership between economic operators, in particular SMEs, with a view to implementing large-scale projects which may be of major significance for innovation.

TIMETABLE AND PROCEDURES FOR IMPLEMENTATION

The REGIE action forms part of the third multiannual programme for SMEs, ending in 2000. The action involves the establishment of a network of EEIGs and of persons with an interest in this form of cross-border cooperation.

COMMUNITY ADDED VALUE, OR RESULT OF THE IMPLEMENTATION OF THE ACTION AS AN INTEGRAL PART OF THE ACTION PLAN FOR INNOVATION

- At present the EEIG is the only legal instrument for partnership which is part of the Community legal order.

-The EEIG permits economic operators to participate in all sorts of projects. In particular, owing to its ability to associate private economic operators with public and semi-public operators or research centres/universities, it has enjoyed substantial success in partnership operations in the R&D projects. It has proved particularly suited to operations with a high innovation component.

RESULTS OBTAINED/REVIEW

- March 1996: REGIE conference, reviewing six years of experience of the EEIG.
- To be published: Practical guide to the EEIG aimed at SMEs.

4. Education and training.

Sheet 4.1: Campus Voice

Title of the action

CAMPUS-VOICE: implementation of a multimedia telematic platform on the Internet (dissemination of services with a high added value in the field of education and training; access to the services through the intermediary of an advance server).

OBJECTIVES/TARGET POPULATION /ANTICIPATED IMPACT

European higher education students (12 million) are the main target, but the project also aims to develop interaction between the students, the teachers and the various partners of higher education, in particular European enterprises in the fields of multimedia technologies and services and the media. The project will facilitate use by students and teachers of the subject matter and services available on the computer networks, and will also facilitate innovative partnership actions with the business world.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

The first phase will consist in making a comparative analysis of students' attitudes to the new services which are available or in the pipeline.

This will make it possible to locate the site in relation to the centres of available resources and to swiftly affirm the European dimension of its services on the Internet. The project will focus on identifying the services most likely to stimulate the university and pre-professional mobility of students as well as the development and dissemination of innovative services and practices through partnerships between students, higher educational establishments and enterprises.

TIMETABLE AND PROCEDURES FOR IMPLEMENTATION

The project was launched on 9 June 1997 in Paris in the presence of Mrs Edith Cresson who is sponsoring it. A model is accessible on the Internet at the address <http://www.campus-voice.com>. The architecture of the web site comprises: headings, databases, contact bases, discussion panels/seminars, open forums. New services will gradually be introduced. The SOCRATES programme is also backing this project as part of its action on the promotion of Open and Distance Learning.

COMMUNITY ADDED VALUE, OR RESULT OF THE IMPLEMENTATION OF THE ACTION AS PART OF THE INTEGRATED FRAMEWORK OF THE ACTION PLAN FOR INNOVATION

The added value resides in the dissemination and accessibility of vast educational and further training resources on a European scale, in promoting mobility (physical and virtual) and in the development, implementation and dissemination of innovative practices and services in the framework of partnerships between the world of education and the world of business.

RESULTS OBTAINED

There is already an initial network of partnerships: 70 partner universities; six partner enterprises, seven major European newspapers. student associations are participating in the project.

4. Education and training.

Sheet 4.2 : Form-Inno-Tech

Title of the action

Establishment of a European network, devoted to the promotion of training for the innovation process, and to providing technological advice to enterprises which either already exist or are being created.

OBJECTIVES/TARGET POPULATION /ANTICIPATED IMPACT

Based on the model which exists in Germany (Steinbeis Foundation) and in cooperation with the network which exists there, the action involves developing a European network aimed at enterprises and, in particular, at the creation of SMEs. The network is also directed at project sponsors, namely the universities and the "Grandes Ecoles" and their innovation training.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

In the initial framework of a Franco-German legal entity, set up on a 50/50 basis, the aim is to establish centres of technological assistance, each with responsibility for a particular region and with competence in a particular branch of activity. A small central team will be responsible for coordinating, promoting and developing this matrix network.

TIMETABLE AND PROCEDURES FOR IMPLEMENTATION

- up to 31 March 1998: preparation of the project
- 31 March 1998: signing of the agreement between the French structure and the Steinbeis Foundation
- 1998-1999-2000: arrangements for the development of about a hundred technological promotion centres in 21 French regions
- 1999: launch of the process in Italy
- 2000: launch of the process in other European Member States.

COMMUNITY ADDED VALUE, OR RESULT OF THE IMPLEMENTATION OF THE ACTION AS AN INTEGRAL PART OF THE ACTION PLAN FOR INNOVATION

The final objective will be the establishment of a European network of centres of inter-Community technological assistance within the legal framework of a European Economic Interest Grouping (EEIG).

The TIME (Top Industrial Managers for Europe) network of the European Grandes Ecoles, led by the Ecole Centrale de Paris, is also involved in the project.

RESULTS OBTAINED/REVIEW

The founding principles of the agreement between the French side, centred on the Ecole Centrale, and the Steinbeis Foundation, were drawn up at a meeting in September 1997. The process is already underway in Italy.

4. Education and training.

Sheet 4.3 : Train-Re-Tech

TITLE OF ACTION

Training for research and technology transfer in enterprises (Train-Re-Tech).

OBJECTIVES/TARGET POPULATION/IMPACTS EXPECTED

Training for research in the TMR (Training and Mobility for Researchers in the 4th Framework Programme) (1994-98) aims to encourage mobility between universities, research institutes and industry. The IHP Programme (Improving Human Capital in the 5th Framework Programme 1998-2002) has a stronger emphasis on research training in and for industry.

Training for technology transfer in Leonardo da Vinci comprises:

- exchanges of teachers, researchers or instructors with experience in new technologies to go to a SME;
- exchanges of teachers and training/human resource specialists in universities and training organisations aiming at technology transfer and networking;
- exchanges of those responsible for training in Chambers of Commerce, training and enterprise councils and industry training organisations to prepare SMEs for new technologies and production processes.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

Develop a better synergy between research training in enterprises and training for technology transfer in enterprises. Better assist enterprises to be involved in research and training actions.

To attain this goal, the TMR research networks will be further developed. In addition, two new measures regarding industrial participation will be launched in the IHP programme:

- Marie Curie Industry Host Fellowships to provide for young researchers the opportunity to carry out research in industrial or commercial environments
- Marie Curie Experienced Scientists Fellowships will allow a transfer of knowledge and technology between industry and academia by funding stays of experienced researchers of industry in universities, or from universities in industry.

The contribution from LEONARDO will concentrate on training alternating between "class room" and work-based learning with a view to transfer new technologies.

CALENDAR AND MODALITIES FOR IMPLEMENTATION

Increased co-operation between the programme Training and Mobility for Researchers and the LEONARDO programme towards the end of their lifetime. Better attuning training actions within "Improving Human Potential" (5th Framework Programme 1998-2002) with the future Community policy on education, training and youth beyond year 2000.

COMMUNITY ADDED VALUE

Most of the LEONARDO projects concerned emphasise technology transfer by a two-way information flow between universities/training bodies and enterprises. Improving internal training in companies is another strong point among the projects.

Value added from "Training and Mobility for Researchers" includes providing trans-European research training to the young researchers that is required when starting a research career in an industrial environment. Furthermore, these actions facilitate knowledge and technology transfer between industry and university.

In future, better co-ordination of training for technology transfer and for research will give more visibility to Community actions set up to increase the skill level in enterprises, especially SMEs.

RESULTS OBTAINED

In 1995/96, the number of mobility projects in Leonardo da Vinci corresponding to the action "Training for technology transfer" amounts to 24 projects, leading to 331 exchanges.

Under the TMR Programme (1994-98), around 10% of all funded projects in the field of Marie Curie Research Training Grants have so far had an industrial component. However, not more than 2-3% of all proposals had a direct involvement of industry (industrial host institute or fellow coming from an industry). 35% of the research networks that are currently starting in TMR have at least one industrial partner.

5. Gearing research to innovation.

Sheet 5.1: Key Actions

TITLE OF ACTION

“Key Actions” on research and technology development

OBJECTIVES/TARGET POPULATION/IMPACTS EXPECTED

RTD activities in the Commission’s proposal for the 5th Framework Programme are organised in four thematic programmes, each of which involves a number of “key actions”. These are multidisciplinary, integrated research actions which focus research on tangible objectives and adopt a systemic, problem-solving approach.

The target population consists of all those who are concerned with research and in particular researchers, industry and research users. Systematic methods will be established for consulting these communities, for example by means of “advisory groups” established for each key action, and for co-ordination between key actions, as well as with other research activities and relevant areas of policy.

By covering the whole range of activities needed to achieve their objectives, and by engaging the research community, industry and research users in their preparation and implementation, key actions will provide a means to steer research towards real industrial and societal needs and assure effective exploitation and uptake of results.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

Eighteen key actions have been proposed, within the context of thematic programmes on “improving the quality of life and the management of living resources”, “creating a user-friendly information society”, “promoting competitive and sustainable growth”, and “preserving the ecosystem”

The link between research and innovation is assured in the design and implementation of key actions as a whole and in relation to each research project involved. Key actions will encompass activities ranging from basic research to demonstration projects. Projects will be of sufficient size to ensure “critical mass” and will be “clustered” where appropriate to maximise synergy and benefits in terms of knowledge and commercial outputs. Evaluation criteria for research proposals will include the exploitation prospects of research outputs. Moreover, as with most projects under the framework programme, a “technology implementation plan” will be associated with the research, and encouragement will be given for the use of effective innovation management tools (value analysis, intellectual property protection) in the management of projects. Mechanisms for technology transfer, both formal and informal (such as via “industrial platforms” associating groups of companies with large research projects), will be established.

CALENDAR AND MODALITIES FOR IMPLEMENTATION

Being a central component of the 5th Framework Programme (1998-2002), key actions will be implemented in this time scale, with first expenditure expected in 1999.

Implementation will be through the specific (“thematic”) programmes described above, by means of competitive calls for proposals, following a detailed work programme and “road map” for the evolution of the activities during the period of the Framework Programme.

COMMUNITY ADDED VALUE

The benefit of key actions arises from their transnational nature, which will bring researchers and other resources together across the Community within an integrated and problem-oriented approach. In addition, by working with relevant national research actions (public and private) they should help to better align national research and create greater complementarity, thereby improving the efficiency and productivity of research at Community level.

RESULTS OBTAINED

Broad support has been achieved on the principle of key actions within Council, Parliament, and the broader communities interested in Community research. First tangible results are expected in the years 2000+.

5. Gearing research to innovation.

Sheet 5.2 : Integrating SMEs in the Framework Programme

TITLE OF ACTION

Integrate SMEs in the EC RTD Framework Programme

OBJECTIVES/TARGET POPULATION/IMPACTS EXPECTED

SMEs are the powerhouse behind Europe's economy : they represent 99.8% of all EU enterprises, 66% of EU employment and 65% of business turnover. They provide more than 80% of job creation and support the competitiveness of larger industry as sub-contractors. High-tech SMEs power rapidly evolving sectors such as multimedia and software, biotechnology and biomedical or environmental technologies. In the US, they are known to produce more innovations per employee and more new products per dollar invested in research than larger enterprises. In Europe, SMEs play a crucial role in local economies being, for some regions, the only source of industrial employment.

Through their participation in shared-cost Community RTD programmes, SMEs can simultaneously internationalise their network of business and research partners while improving their technological base, through a shared RTD effort or by having access to RTD results.

Of the 2 million industrial SMEs in Europe, some 17% (350.000) are active in high or medium high technology sectors. EC studies also showed that some 2% of these companies have own RTD capabilities, while some 10 to 15% have RTD needs they cannot satisfy through their own means. RTD is a crucial element of competition in the service sector, where 20.000 SMEs are classified as providers of RTD services and 180.000 are active in information technology or telecommunication.

While many of these companies can satisfy their needs relying on private collaborations or national programs, the objectives of the Technology Stimulation Measures for SMEs (TSME), implemented in the 4th Framework Programme, are to facilitate and to increase their participation in EU research projects. The horizontal programme on "Innovation and participation of SMEs" proposed for the 5th Framework Programme will sustain and strengthen these objectives.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

In parallel with an "Innovation" component, the proposed programme on "Innovation and participation of SMEs" aims at reinforcing the participation of SMEs. The two components are strongly interlaced as for the large majority of SMEs it is not conceivable to invest in expensive and risky research activities that will not lead to an innovation that can be exploited on the market.

The reinforcement of the SME participation will be achieved by five types of instruments:

- Exploratory Awards will allow SMEs to be supported for preparing a full proposal;
- Co-operative Research (CRAFT) projects will enable groups of SMEs with similar technical problems but insufficient research means to engage third parties (called RTD Performers) for carrying out research on their behalf;
- A single "Entry-point", common for all specific programmes, for submitting Exploratory Awards or CRAFT proposals;

- The co-ordination and rationalisation of information and assistance networks;
- Common management and assistance tools (Information Package, Information Documents, SME Help-Line, Evaluation Procedure, CRAFT Contract...) developed and managed centrally to facilitate the participation of SMEs to the Framework Programme.

CALENDAR AND MODALITIES FOR IMPLEMENTATION

The proposed horizontal programme on "Innovation and participation of SMEs" will be implemented in the 5th Framework Programme (1998-2002).

COMMUNITY ADDED VALUE

The EU RTD Framework Programme is one of the few transnational schemes for undertaking common transnational and multidisciplinary RTD projects. It therefore offers innovative SMEs an additional tool allowing to simultaneously improve their technological base and internationalise their network of contacts and research partners.

Research and technical development are only one of the dimensions of innovation. Linking the preparation and implementation of the "Innovation and participation of SMEs" specific programme to the implementation of the Innovation Action Plan, allows to simultaneously act on other issues that hinder innovation for European SMEs (Financing of innovation, Protection of Intellectual Property, Education and Vocational training ...).

RESULTS OBTAINED TO DATE

Thirty months into the 4th Framework Programme, some 9000 SMEs (55% more than in Third Framework Programme) have signed a contract for participating to a shared-cost research project :

- Some 3800 SMEs are participating in projects launched in the first two years of this Framework Programme (1995 and 1996). This is as much as in all 4 years of the previous Framework Programme !
- The 1264 Exploratory Awards and the 282 CRAFT projects supported to date by the TSME are allowing 2800 SMEs to prepare a proposal together with a foreign partner, while some 1900 SMEs are now involved in CRAFT type research projects. The total number of 4700 SMEs supported through the TSME is already 2/3 more than the 2700 SMEs who benefited from the pilot CRAFT scheme under the Third Framework Programme.
- Small enterprises (less than 50 employees) represent 60% of participants to the TSME.
- Almost 30% of these participants come from more traditional sectors such as agro-industry, construction, mining, textile or wood. 20% of them come from the 4 Cohesion countries (Es, Gr, Irl, Pt). This seems to confirm that the project types offered under the TSME satisfy the needs of industrial sectors and regions of lower technological development.
- Newcomers represent some 75% of participants to the TSME, which, therefore, allowed some 3200 SMEs to partake for the first time in EU RTD programmes.

5. Gearing research to innovation.

Sheet 5.3 : Improved gearing of research to standardisation.

TITLE OF THE ACTION

Improved gearing of research to standardisation

OBJECTIVES/TARGET POPULATION/ANTICIPATED IMPACT

The action aims to improve awareness of the pre-standardisation dimension sufficiently upstream in the research and innovation programmes of the Fifth Framework Research and Development Programme (FRDP), in order to increase the competitiveness of European industry and to improve the quality of products and services for the benefit of consumers and citizens. The impact of such an approach will promote sustained growth, competitiveness and the interoperability of products and services. This covers all the economic operators, producers or consumers, and research bodies.

MAIN LINES OF THE ACTION AND THE INNOVATION COMPONENT

Main lines of the action

The Commission document describes the status of pre-standardisation research in the specific programmes of the Fourth FRDP. It underlines the importance of standards as one of the pillars of the European policy for promoting quality, as a factor promoting growth, competitiveness and innovation, and as a vital component of the interoperability of products and services. It highlights the role of standards as a bridge between the technical sector and the regulatory framework.

Innovation component

The Commission document proposes the introduction of a mechanism to improve communication and coordination between the research and innovation programmes, the Joint Research Centre, and the economic operators involved in standardisation. Each "key action" of the Fifth FRDP will include a structure to monitor pre-standardisation projects and to develop tools in support of the European quality promotion policy. Lastly, it encourages the Member States to step up their activities for informing and raising the awareness of the economic operators involved in standardisation, including SMEs, as to the role played by standards in the exploitation and dissemination of results.

TIMETABLE AND PROCEDURES FOR IMPLEMENTATION

The implementation of the activity provides for a workshop to consult operators outside the Commission. The corresponding actions will be included in the various specific programmes, key actions and thematic activities of the Fifth Framework Programme.

COMMUNITY ADDED VALUE, OR RESULT OF THE IMPLEMENTATION OF THE ACTION AS AN INTEGRAL PART OF THE ACTION PLAN FOR INNOVATION

The European strategy of combating protectionist standards and of promoting international rules and standards opens up an obstacle-free world market to European manufacturers. In addition, this strategy is likely to promote the European standardisation approach internationally and to encourage innovation by assisting the adoption of performance standards.

RESULTS OBTAINED/REVIEW

The working document marks an important phase in the implementation of Community policy on standardisation. It outlines many achievements in the field of pre-standardisation research which have or will have an effect on European and international standardisation or which will support Community legislation. These examples are taken from the fields of industrial technologies, telecommunications, aerospace industry, public health, agriculture and the environment.

5. Gearing research to innovation.

Sheet 5.4: PROSOMA

TITLE OF ACTION

PROSOMA Esprit

Multimedia access to European IT research and development

OBJECTIVES/TARGET POPULATION/IMPACTS EXPECTED

The PROSOMA service aims to increase the industrial impact of the Esprit programme by facilitating access to and uptake of results stemming from projects undertaken under the programme.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

PROSOMA offers multimedia showcases of R&D results, arranged to make it as easy as possible for users to find what they need. The service includes multimedia presentations, summaries and detailed backup. It also offers links to a growing network of web sites for background information on how research results are implemented in product lines, and on the terms and conditions for their exploitation.

Collectively, the presentations form a virtual technology fair - a multimedia showcase of innovative results. Access to the service can be achieved via the 'WWW Showcase' at the Internet address URL: www.prosoma.lu, or by the 'CD-ROM Showcase' which is updated regularly. In both cases the presentations can include video footage, still images, animation, interviews, demonstrations and access to the www home pages of the respective result owners.

CALENDAR AND MODALITIES FOR IMPLEMENTATION

The contract for the PROSOMA service has started on 1. July 1996; the first version of the CD-ROM and Web showcases will be available on 24 November 1997; a pre-release version of the Web showcase is operational (URL: www.prosoma.lu)

COMMUNITY ADDED VALUE

The PROSOMA service provides a means for companies who are looking for innovative solutions to their needs to identify relevant RTD results. It also enables businesses to learn from the experiences of others in developing and applying best practice. Giving access to appropriate technologies and applications, and showing the benefits of innovation will contribute to a more innovation-oriented culture in the companies.

Those who have participated in Esprit can show potential business partners what they have achieved, perhaps with a view to licensing agreements, collaboration on further developments or broadening their user base.

RESULTS OBTAINED

A pre-release of the Web showcase is operational (www.prosoma.lu); the first release of the CD-ROM and Web showcases with a significant number of results was presented at the EITC conference, at the end of November 1997.

5. Gearing research to innovation.

Sheet 5.5 :Technology transfer initiative at the Joint Research Centre (JRC)

TITLE OF ACTION

A European technology-transfer initiative at the Joint Research Centre (JRC)

OBJECTIVES/TARGET POPULATION/IMPACTS EXPECTED

The Joint Research Centre, which consists of 7 institutes located in 5 Member States, has launched a new initiative aiming at making a better use of its expertise and facilities, generate synergy with European industry (especially SME) and other research and innovation centres and help create innovative companies. A feasibility study on this subject was completed in September 1997. The end result is a recommendation for a coherent set of activities aiming at an improvement in the technology transfer and collaborative research at the JRC. The actions which have been decided and which have an open nature towards other research centres and technology transfer initiatives, are expected to generate an important positive impact across Europe.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

The initiative has five important components, which are:

Flexible collaboration agreements for the sharing of large installations. The JRC possesses several highly sophisticated and often unique facilities and laboratories. While operation of JRC facilities by external companies does not appear as viable, access to a facility with its technical support staff could be granted on a short term basis following standard contracts. This measure should also stimulate collaborative research projects with mixed research teams making optimal use of the available infrastructure, the addition of new equipment to existing installations or the creation of new installations co-financed or wholly funded by external organisations.

A technology transfer capital fund. To facilitate the access to capital to finance the transfer of technology, the possibility of creating a special fund will be investigated. It will be specifically, but not exclusively, dedicated to JRC projects. This may serve the needs for new start ups (seed capital) as well as of technology transfer to SMEs. Further consideration will be given to the possibility of raising funds on the market and of having a professional fund management company taking care of the operation, selection of projects and follow up of investments.

A virtual technology park. The creation of a virtual technology park on a European scale will be explored with a view to create a new way of transferring technology and stimulate collaborative research across Europe. The JRC may take up a role as catalyser of such initiative. It will make extensive use of the newest telecommunications facilities and applications while making accessible for industry the expertise available in national research centres, risk capital and innovation financing opportunities, creating virtual mentorship programmes etc. Partners (research centres, telecommunication operators and end users) in the Member States will be integrated in the project from the outset.

An extended incubator. The concept of a business incubator extending beyond that of a traditional incubator on local scale would be explored. JRC could offer an assistance and a supportive environment for start-up companies. It could also offer a temporary basis for research teams of existing firms entering in collaboration with the JRC, for the duration needed by the project, therefore facilitating the access to JRC's facilities for companies which are geographically distant.

A training and education initiative; The potential for training and education will be investigated along three lines building on similar initiatives in the Member States and in direct contact with industry and venture capitalists: i) an industry secondment scheme under which staff from industry would be hosted for short periods in the laboratory environment to gain direct contact with the facility and the expertise involved; ii) training programmes targeted to industry and national institutions in particular areas where the competence of the JRC is very strong, e.g. in measurements and testing or on new regulatory frameworks; iii) a education initiative targeted to innovation building on existing experience with scientific training on PhD and post-doctoral level. As a complement to this scientific content, curriculum components could be geared directly to technology transfer activities and entrepreneurship, building on a network with entrepreneurship training programmes in the Member States.

CALENDAR AND MODALITIES FOR IMPLEMENTATION

The initiative will be implemented in a progressive way. It will be planned in a phased approach with clear milestones and go-no go decision points. In certain areas, pilot actions will be initiated before engaging into a fully fledged activity. Provision will be made for monitoring the developments and evaluating the results. Implementation, which will involve a joint effort from JRC and associated services, notably DG XIII-D, will start in 1998.

COMMUNITY ADDED VALUE

The development at the JRC of a coherent set of activities fostering technology transfer, increasing collaborative research and stimulating networking across Europe is an indispensable and desirable complement to JRC's institutional activities offering significant European added value.

6. Strengthened overall coordination.

Sheet 6.1: Trend chart on Innovation in Europe.

TITLE OF THE ACTION

Trend Chart on Innovation in Europe

OBJECTIVES/TARGET POPULATION/IMPACTS EXPECTED

The first and priority target group will be policy makers in the Member States (e.g. national, regional and local authorities, confederations of industries, trade unions etc).

The second target group will be the Commission services in charge of innovation-related policies, as well as other Community Institutions.

The third target group will be researchers and experts involved in this domain and also, more generally, all the actors participating in the innovation system. The trend chart will thus contribute to the promotion of a innovation culture in Europe.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

The purpose will be to establish a common reference framework picturing the situation of innovation in Europe, in which each Member State can position itself, in order to assess its strengths and weaknesses. The trend chart will provide information on innovation policies, and measures to stimulate innovation in European countries, highlighting successful measures and noticeable trends.

CALENDAR AND MODALITIES FOR IMPLEMENTATION

The main deliverable of the project will be a report produced on a periodical basis, containing :

- *an executive summary - max. 5 pages* (mainly intended for policy makers),
- *a synthesis on innovation policies and performances - max. 20 pages*, which can be appropriately used by Commission services and other Community and national administrations.
- *annexes on priority topics, trends, statistics, case studies etc* which will provide a set of materials for researchers, consultants and specialists of innovation policies.

- Besides, a regularly updated page in the world wide web (WWW) presenting the information available will be set up.

- Lastly, workshops, conferences, seminars, information campaigns and whenever appropriate, actions with a demonstration purpose, will be organised in order to exchange experiences, to disseminate main findings and best practices, as well as to carry out further analyses on specific topics.

COMMUNITY ADDED VALUE

It will also be used as a policy analysis and monitoring tool, showing, wherever possible, policy options, evaluating results and efficiencies of these policies, and facilitating the dissemination of best practices. Lastly, the trend chart will help to establish a dialogue framework with the Member States, in order to identify priority options and opportunities for cooperation.

RESULTS OBTAINED

The project and the work schedule have been validated on a first meeting of the Group of Senior Officials from the Member States in November 1997 held in November 1997.

6. Strengthened overall coordination.

Sheet 6.2: Benchmarking.

TITLE OF ACTION

Benchmarking framework conditions for the competitiveness of European Industry

OBJECTIVES/TARGET POPULATION/IMPACTS EXPECTED

In its communication on "Benchmarking the competitiveness of European Industry", the Commission proposed to develop benchmarking as a policy tool for improving European industrial competitiveness. Innovation has received due attention as it is a main determinant of competitive performance. Particular reference has been made to intangible investment and the importance of skills, technology and adaptive organisations, quality, diffusion and financing of innovation. The Industry Council encouraged the Commission to pursue this action in its conclusions on benchmarking of 14 November 1996. The Commission subsequently set out the steps to be followed in its communication on benchmarking "Implementation of an instrument available to economic actors and public authorities", adopted on 16 April 1997. Involvement of the Member States through a bottom-up approach constitutes a key feature and will facilitate implementation. The Commission and the Member States are working to define and implement pilot projects related to the benchmarking of framework conditions. Benchmarking framework conditions is aimed at evaluating the efficiency of public policies which affect competitiveness as well as identifying the steps required to improve them.

MAIN LINES OF THE ACTION AND INNOVATION COMPONENT

Four pilot projects have been formulated. They are following a common format and are taking a stage-by-stage approach. The first stage is definitional, with the information available being analysed in the context of what is required to benchmark framework conditions in each area. The second stage involves establishing appropriate benchmarks, collecting relevant information in participating countries and establishing where and how best practice is achieved. The third stage involves drawing policy conclusions from the exercise and disseminating policy results to the different actors concerned (EU, national and local authorities, social partners, industry and other interested parties).

The following projects are particularly related to innovation :

- Diffusion of information and communication technologies and new organisational forms (lead country: Finland)
- Financing of innovation (lead country: Denmark)
- Human resources and skills (lead country: Spain)

CALENDAR AND MODALITIES FOR IMPLEMENTATION

During June and July 1997, meetings of Member States' delegates were held to finalise the terms of reference for each of the four pilot projects

Steering Committees, chaired by the lead Member State and made up of one representative of each participating Member State and representatives of relevant Commission services, will be established for each pilot project to ensure satisfactory implementation throughout the project.

Some preliminary results of the current exercises will be presented to the May 1998 Industry Council. Results from all pilot projects will be reported to the Industry Council in November 1998.

COMMUNITY ADDED VALUE

The Commission calls attention to benchmarking as a tool to promote better implementation of measures in key areas for competitiveness by focusing on factors and conditions that determine superior performance and exchange of information on best practices.

RESULTS OBTAINED

Results are expected to be available for the November 1998 Industry Council.

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