

Innovation & Technology Transfer

Special Edition

European Commission launches

First Action Plan for Innovation in Europe

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 - **Fostering an innovation culture**
 - **Creating an environment conducive to innovation**
 - **Gearing research to innovation**





European Commission launches Action Plan for Innovation

A year ago the European Commission drew attention to Europe's 'innovation deficit' through the publication of a *Green Paper on Innovation*. The ensuing debate confirmed the Commission's view that the problem should be tackled on a broad front. At the June summit of EU heads of state and government, held in Florence, the Commission was invited to draw up an action plan of measures to stimulate innovation.

The Commission has now published its first action plan. It addresses three key issues: how to foster a real innovation culture in Europe, how to make sure that the environment in Europe allows innovation to thrive, and how to improve the link between Europe's research capabilities and innovation.

This special edition of *Innovation & Technology Transfer* presents the main points and also includes a detailed digest of the plan's contents. A series of tables summarizes the proposed measures and indicates how each should be implemented: by the Commission or in Member States.

The measures for implementation by the Commission fall into three areas. Firstly, adjustments should be made to the basic regulatory and administrative framework, notably in the areas of industrial property and administrative simplification, so as to favour innovation. Secondly, the Commission should provide a forum for comparing and exchanging information on innovation-promoting activities, and for disseminating 'best practice'. This is particularly relevant in the area of financing and venture capital. Finally, the programmes managed by the Commission, notably the Research Framework Programme, the training programmes, and the structural funds, can be used to promote innovation.

At the EU level, the proposed measures could be introduced without any supplementary allocation of funds beyond what is already available or foreseen. But it is clear that the main effort to reduce the 'innovation deficit' must be undertaken at national, regional or local level, with business enterprises to the forefront. ■

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ABOUT INNOVATION & TECHNOLOGY TRANSFER

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The emphasis is on timely news relevant to these objectives and in-depth 'Case Studies' of successful projects. Each issue also includes a major Dossier on one topic. Subscription is free - please fill out the request form on the back page and fax or post it back to DG XIII/D-2.

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Action for Innovation

To develop a genuine innovation culture. To create an administrative, legal and financial environment conducive to innovative projects. And to enhance the link between the production of knowledge (research) and its dissemination (training, mobility, research/industry cooperation), while ensuring that the largest possible number of players benefit, especially SMEs. This is the three-fold aim of the European Commission's first Action Plan for Innovation. It is a policy specifically developed to reflect the priorities of all those who came forward to voice their expectations, following publication of the Green Paper on Innovation.



Charles Leonard, MIRC

**Mrs Edith Cresson,
Member of the
Commission in charge of
research, education and
human resources:
"Innovation depends
ultimately on people and
enterprises. It is up to
governments to create
the environment for
innovation to flourish
by removing obstacles
which can stifle it."**

How can Europe's ability to innovate be revitalized? This question goes far beyond purely technological considerations. Cultural attitudes, the economic environment and legal structures are all key factors in fostering a spirit of innovation. Developing this spirit, therefore, requires a multidimensional approach which integrates such widely varying components as training, competition, the regulatory and administrative framework and financial aspects.

Furthermore, a policy for promoting innovation must take into consideration the diversity of national, regional and sectoral situations. Most of the incentive measures will need to be adopted at Member State level in order to take these specific features into account.

Priorities and Action Plan

Consequently, the role played by the European Union will respect, first and foremost, the principle of subsidiarity. Community action will, therefore, have to promote the harmonization of national and regional policies, as well as the exchange of information and dissemination of good practice. However, it will also need to respond to the expectations of those responsible for innovation in Europe who are anxious for their initiatives to be framed by an international context in which the Union sets the rules of the game and ensures that they are respected - particularly in terms of competition, industrial property law and the internal market.

Finally, the European Commission will also be required to introduce innovation-promoting measures into its own action instruments, such as the Structural Funds, the RTD Framework Programme and the specific incentive measures for SMEs.

Based on these priorities, the Union is today launching its first European Action Plan for Innovation. This plan focuses on three fundamental aims: to develop a genuine innovation culture; to adapt the administrative, legal and financial environment; and to boost research and the ability to

put into practical application the benefits of knowledge and new technology.

An innovation culture

Above all innovation calls first and foremost for a certain mentality: creativity, a sense of initiative, an entrepreneurial spirit, organizational rigour and a willingness to embrace social, geographical and occupational mobility.

Training and mobility

The development of a genuine innovation culture depends, first of all, on education and continuing training. Although primary responsibility for such policies lies with national and regional governments, European actions are nonetheless vital for stimulating such policies and enriching the critical debate. It is with this in mind that the Commission is planning to launch a permanent forum on *Training and Innovation*, to permit the exchange of educational experiences among all the countries of the Union with a view to developing the ability to innovate from the earliest age. In the same spirit, its *Learning in the Information Society* initiative is aimed at interconnecting European schools immediately, in order to provide young people with training in the new knowledge-transmission technology. ●●●

Initiatives will also be launched to encourage the placement of researchers and engineers in SMEs in order to guide and support their innovation and technology transfer projects.

The Commission will also extend the Erasmus programme formula - which has proved its value in university exchanges - to the field of apprenticeships.

Raising the awareness of the general public and social players

The success of innovation also depends on the amount of support it receives in society. Citizens and their representatives

must therefore be involved in the debate surrounding major technological choices. For them to participate, new modes of social organization and communication have to be established in which the European Union is called upon to play a major role, especially in encouraging the exchange of innovative approaches to citizenship. It is also necessary to stimulate participatory processes within enterprises.

Organizational culture

Innovation is dependent on a management strategy capable of anticipating needs, monitoring technology, controlling lead

times and costs, promoting flexibility, cooperating with external centres of expertise, etc. So-called "agile" enterprises which are capable of implementing such a strategy appear to be the most capable of coping with the demands of innovation. To supplement the efforts of Member States and to help industrialists meet such demands, the Commission will play a dual role: it will implement a system of comparative evaluation (benchmarking) to assist enterprises in identifying internationally-proven factors of success, and it will provide support for management training in innovation.

The Green Paper: A Europe-wide debate

There was massive feedback on the Green Paper on Innovation, published by the European Commission in December 1995, which analysed in detail the current climate of innovation in Europe. The ensuing wide-ranging debate went beyond the borders of the Single European Market. Over 40,000 copies were distributed. The Green Paper was examined by the different Community institutions, the governments and those involved at grass-roots level.

The opinions of the European Parliament, the Economic and Social Committee and the Committee of the Regions were positive and underscored the importance of technology dissemination, the principle of subsidiarity, the role of economic operators and the social dimension of innovation.

Conferences and debates on the Green Paper were held in all the Member States, as well as in Norway and Iceland, at the initiative of the Commission and with the support of the national authorities. These were attended by around 5,000 participants, including company directors and heads of research centres, financial institutions, public administrations, innovation



agencies, trade unions, universities, etc.

Furthermore, over 300 detailed contributions were sent to the Commission, mainly from enterprises or their representative organizations.

Finally, most of the Member States, as well as Norway and Hungary, added their official positions to the comments of those involved at grass-roots level.

Hence we are witnessing an unprecedented general mobilization

around the need for innovation which is considered not as an end in itself, but as a necessary means of achieving fundamental social objectives and sustainable growth, as well as of improving the competitiveness of enterprises and boosting employment. The European Council took due note of this at the Florence Summit and invited the Commission to establish the present Action Plan identifying measures to be taken.

The full text of the Green Paper is available in all official EU languages (see page 24 for contact details).

Public authorities

Finally, innovation is of concern to public administrations and services which play an influential role in economic life, especially in view of the size of the contracts they award. Special attention will be paid to promoting innovation among public decision-makers and administrators. An exchange of experiences will be organized to encourage innovation in public administration.

The Commission will also set up permanent monitoring of innovation performance and policies in Europe and will publish regular reports on innovation throughout the Union.

Legislative, administrative and financial environment

Although innovation requires a certain attitude of mind, it is unable to develop without a conducive legislative, administrative and financial environment. The main prerequisite for fostering a spirit of innovation is unfettered free competition. It is in this field, par excellence, that the European Commission enjoys widely recognized powers. It will continue to play this role whilst ensuring that innovation is encouraged to the full.

To this the Action Plan adds three priorities relating to intellectual property, administrative simplification and financing for innovation.

Intellectual property

The protection of intellectual property is at the heart of the innovation issue. In this respect, Europe is in a less favourable position than its main competitors, which have the advantage of unified patent rights. Moreover, it is difficult to accept that filing and maintaining a patent costs six times as much in Europe as it does in the United States.

In 1997, the Commission will, therefore, prepare a Green Paper on the issue of Community patents. This will examine:

- whether it is desirable to move away from the Luxembourg convention on Community patents to a legal system covered by the Maastricht Treaty;
- increasing Community-level harmonization of national patent law;
- establishing links between the European patent system and the Community patent, as well as possible adaptations of the system of taxes and fees.

The Commission will also set up a help line for participants in Community research programmes. Together with the Member States, it will continue its efforts to harmonize and supplement legislation (e.g., for the information society, design work and inventions by employees) and strengthen its own role in combating patent infringements.

The Commission invites the Member States to set up instruments for assisting SMEs and universities in the event of legal disputes, to heighten the awareness of SMEs and to develop appropriate training.

Administrative simplification

The burden of administrative measures has already been eased at national and Community level. Further action is required in particular to simplify the formalities for starting up a business. Awarding grants for innovation should also be made simpler. On this last point, the coordination and rationalization of support structures are intended to help SMEs understand how to direct their applications.

At the same time, legal structures suited to the needs of innovative enterprises (European company, joint venture, etc.) should be finally adopted or created, to supplement the existing structures that encourage innovation, such as EEIGs.

Financing for innovation

Financing was one of the main priorities identified in the debate on the Green Paper. The Commission's Action Plan on this issue is guided by three objectives.

The first is to encourage *investment in venture capital and equity*, in particular for start-up investment and for rapidly expanding innovative enterprises that are a source of job creation.

More resources should be channelled from pension and insurance funds into venture cap-



ital. European Investment Funds for promoting innovation could be reinforced by means of a pilot mechanism to encourage venture capital funds, in which the EIF could take shares, to be invested in the start-up phases of innovative projects.

More generally, it is vital to divert a larger proportion of the Structural Funds (ERDF and other initiatives) towards innovation at Community level, as well as at national and regional level.

The second objective is to meet the requirements for the *expansion of trans-European capital markets for growth enterprises* at both national and Community level.

The final objective is to enhance the relationship between technological innovation and the world of finance by establishing *closer links between research and private financing* for the exploitation of research results. With this in mind, the Commission will set up a financing information and guidance service for participants in the Framework Programme.

“
In order to fight unemployment, Europe must secure a growth stronger and better centred on the domains of the future.
 ”

(Confidence Pact for Employment, June 1996)



Enhancing the link between research and innovation

The link between research and innovation is fundamental. It is also true that the link between these two areas needs to be reinforced at both national and Community level. The fact is that the share of GDP devoted to funding research by European enterprises is much lower than that of their American or Japanese rivals, despite the fact that industry provides the most favourable opportunities for the application of research.

The Commission, therefore, invites Member States to set themselves the ambitious target of *increasing private funding* for research - whilst reinforcing the funding for and effectiveness of public research efforts.

Technology-based business creation needs to be encouraged - mainly by reinforcing and exploiting the potential of structures which have proven to be effective (spin-off, campus companies, etc.). Starting in 1997, the Commission will be organizing an in-depth exchange of such experiences involving Member States and those responsible for innovation. It will also back the dissemination of good practice by means of pilot actions involving universities, regional institutions, venture capital companies, technology brokers, etc.

More generally, **cooperation between public research, universities and enterprises** must be intensified. A legal and practical framework to foster such synergies should, therefore, be established (in the field of procurement and career development, for example).

Finally, the Union's collective ability to utilize and optimize knowledge and know-how, from whatever source, must be enhanced. At national level, public authorities are, therefore, invited to extend **support measures for the transfer of technology of international origin**. The Commission for its part will develop

activities to strengthen links between the various national and regional innovation systems and promote the demonstration of approaches that have already proven their worth.

SMEs and Innovation

The Commission has decided to launch a number of actions to foster the development of technology transfer for the benefit of SMEs, in particular by facilitating their access to the full range of research work and results.

A single simplified framework will be established - as part of an integrated approach - highlighting the "innovation" and "SME" dimensions of the Framework Programme. The procedures for implementing projects and programmes will be modified accordingly, in particular the criteria for evaluating proposals, preparation of the exploitation phase, the adaptation of contracts to suit SMEs, project monitoring and evaluation, etc.

Key areas of international cooperation

Furthermore, the international dimension of innovation will be enhanced through closer links with other European programmes (such as COST and EUREKA), support for cross-border industrial cooperation and greater international cooperation with non-member countries in research and technology development (RTD), in particular by further opening up programmes such as TACIS, PHARE and MEDA.

Certain priority fields will also be defined. These could include environmental protection and sustainable development, the service sector, the audio-visual sector and perhaps rural development.

Coordinating policies

Above all, the measures proposed at Community level require, first and foremost, effective coordination between the various underlying policies and

Action Plan

The following text covers priority actions, mainly at Community level, which emerged from the debate and which could be rapidly developed in order to respond to the expectations which were voiced. At this stage it only includes measures for which it is possible to describe the operational procedure and which could be covered by the existing budgetary framework without incurring new expenditure, but with a possible reallocation of resources.

At Community level, the new actions will be launched immediately. Actions in progress will be accelerated or reinforced where required.

At national level, the Commission, in collaboration with the Member States, will carry out a more in-depth analysis to identify priority options and opportunities for cooperation, the implementation of which could be left to the Member States.

optimum interaction with those developed by Member States. They also require a common framework of reference to help Member States to define their priority options as well as opportunities for collaboration.

The Commission will present an implementation timetable and cost assessment for these measures to the Council, the Parliament, the Economic and Social Committee and the Committee of the Regions. It will also establish an annual report for the European Council on the implementation of this first Action Plan.

This Plan responds to the needs of an innovative and competitive Europe. And the energies revealed in the debate on the Green Paper are promising indicators of a concerted will to build a Europe of innovation. □

I. Fostering an innovation culture



Science Museum London

Innovation depends on creativeness, a sense of initiative and enterprise, a willingness to take calculated risks and a readiness to cope with mistakes and accept social, geographical or professional mobility. But innovation also needs other skills: the ability to anticipate needs, careful organisation, and a capacity for meeting deadlines and controlling costs. Innovation increasingly relies on a wide range of interaction, which means that skills in information collection and processing and personal and social communication skills are also needed. A favourable culture is essential.

Facts & Figures

- In 1996, Europe had 4.7 scientists and engineers for every thousand inhabitants, compared with 7.4 in the United States and 8 in Japan. Also, the combined total of scientists and engineers in China, India and Indonesia is now the same as the figure for the European Union.

- A survey of 927 SMEs, in 1995, as part of the Euromanagement action revealed that the language barrier was a decisive factor for 67% of the SMEs that were eligible for Community R&D programmes but were afraid to go ahead.

The United States, with its frontier mentality and the idea of the melting pot, thrives on risk, social and geographical mobility and straightforward relations. In Japan, culture and society emphasise excellence, steady improvement and organisation. As for Europe, it has grown up around social systems which differ widely but where, today, as a rule, risk-taking is shunned in favour of seeking security and stability.

Changing the culture and the mentality of a people cannot be achieved by legislation or by any short-term measures. Means of action exist, however, and fall into three main areas.

1. Education and training

Initial education needs to concentrate on imparting the skills that are needed to produce and implement innovation. Technical education and vocational training must not be neglected. But the acquisition of a basic educational grounding is essential to facilitate ongoing adaptation to the new skills that innovation requires.

Training is a necessity throughout life. It comes up against particular problems in SMEs (especially the limited available time of managers and employees) which need to be dealt with through novel solutions, possibly involving distance learning and multimedia techniques.

There is also a need to bring education and business closer together, especially by means of sandwich courses, so that apart from helping young people

enter the job market it is possible to prepare for the new skills or qualifications that are needed and to adapt training to these needs.

The Member States and regional or local authorities are invited to reinforce their action in these fields and, in particular, to:

- take a critical look at the programmes and methods of education;
- analyse the changes that apparently need to be made to the training of trainers;
- encourage the effective command of several Community languages;
- stimulate real cooperation between education and business;
- develop long-term partnerships between enterprises and training bodies.

The Commission will promote the exchange of experience and the dissemination of good practice in these areas among the Member States and with the social partners by introducing a permanent "training and innovation" forum.

The Commission therefore plans to introduce from 1997 an "Erasmus of apprenticeship" and to draw up, with the governments and the social partners, a European apprentice statute and proposals seeking to facilitate, at European level, the valorisation and accreditation of skills throughout life.

Lastly, with the "Learning in the information society" initiative, it will set out to coordinate existing instruments and actions (education and training, research, trans-European telecommunica-



tions networks, Structural Funds) to link schools throughout Europe.

2. Encouraging mobility

In spite of efforts to promote it, such as the programme for the training and mobility of researchers, mobility between research centres, universities and industry is all too often hampered by practical or cultural barriers. Similarly, as technologies are becoming more and more "trans-sectoral", mobility between branches of industry needs to be made easier.

At Community level, the Commission will introduce the priority measures to encourage the mobility of students, teachers, engineers and researchers.

In setting priorities for the Fifth Framework Programme for Research, the Commission is proposing a wide programme with the main objective of enhancing human potential. It should in particular boost the efforts to arrange for transnational secondments of young researchers and engineers to businesses, in particular SMEs, to help with their innovation or technology transfer projects. It will take all the necessary steps to make the mobility aid programmes of the Community more flexible, particularly by:

- making exchanges of staff one of the eligible cost headings in long-term cooperation projects on RTD and the use of large-scale equipment;
- making age limits and authorised secondment periods more flexible, in order to enlarge the potential pool of beneficiaries (older researchers, SME staff).

At national level, it will recommend establishing effective "interoperability" of the systems for assessing career development or qualifications.

3. Raising public awareness and involving the operators concerned

The need for and beneficial effect of change, in the broadest sense, need to be widely discussed. Mechanisms whereby enterprises, the public and their representatives can be involved in discussing the major technological options and arrangements for the involvement of employees, users or consumers pave the way for the acceptance and ultimate success of innovation.

There are many initiatives and successes at national level in these fields. The exchange of experience between Member States needs to be stimulated, and also where appropriate the linking

in networks at European level of successful ventures, if this can help with their dissemination and improvement.

With this in mind, the Commission will implement different measures, in particular, promoting scientific and technical culture through cooperation with European television channels.

4. Business management

Involvement in the management of enterprises is not of course the responsibility of public authorities. However, these authorities can and must create an environment conducive to the ongoing improvement of business management and organisation. The rapid spread of information and communication technologies will contribute greatly to these adaptations and must be actively supported.

"Agile" enterprises that are ready to react speedily to changing circumstances, to forge cooperative links with a wide variety of external partners (other enterprises, universities, consultants, centres of excellence) and thereby to constitute flexible sets of competence are likely to be the best suited to the demands of innovation.

For the benefit of enterprises the Commission will launch transnational pilot actions for the networking of certain sectors or technologies. These actions should be designed to explore best practice in the management and training fields. The results of these projects will be disseminated throughout the Union. A European Guide to Industrial Innovation will offer manufacturers a method of self-assessment for their strengths and weaknesses in the field of innovation, together with a guide to the relevant help and advisory services.

The Commission will support the linking in a European network of the various schemes at national level. It will introduce a Europe-wide "benchmarking" system, especially in the field of quality.

The Member States are called on to reinforce their actions for the training of business managers and the social partners in innovation management.

The Commission will support training schemes for innovation management, especially through the development of European networks of business schools and their cooperation with industry and SME support bodies.

The Commission will also increase its support for the training of business managers, in particular of SMEs, in new

management methods and the training for employees that is needed to introduce these new methods in enterprises.

5. Public authorities Innovation in the public sector

Government policy-makers are paying more and more attention to innovation and technology. But their idea of what is at stake and of the potential of technology, as well as of the details of action on innovation, remains generally sketchy.

From 1997 the Commission, in conjunction with the European Institute for Public Administration and on the basis of current work, will undertake a series of discussions and exchanges of experience on the promotion and dissemination of innovation in government and public services. A conference on this topic will be organised in 1997, and its findings could result in the publication of a green paper at the beginning of 1998.

The Commission will continue its action under the "Information Society" initiative designed to encourage innovative approaches in the public sector.

Public contracts

More active competition in the case of public invitations to tender is desirable, as it can stimulate innovation. Several provisions in European legislation on public contracts allow for derogation or special rules of application, especially in the special sectors (water, energy, etc.), if a tender relates to innovative products or manufacturing processes; full use should be made of these possibilities.

Analysis of innovation policies and systems

The comparative study of innovation systems, policies and infrastructure in the developed nations, and especially in the European Union, needs to be continued and exchanges of information and experience among the Member States encouraged.

The Commission will reinforce its system of collecting and analysing information on research and innovation. It will draw up a permanent management trend chart for innovation policy and performance in Europe, with comparisons with the rest of the world. It will produce and distribute widely a regular report on innovation in the Union, based on national and international studies and analyses in this field. □

I. Synoptic table of main initiatives proposed in the Action Plan for **FOSTERING AN INNOVATION CULTURE**

NEW ACTIONS

EDUCATION AND INITIAL AND FURTHER TRAINING

COMMISSION

- Set up a "training and innovation" forum to exchange experience and disseminate best practice (1997).

MEMBER STATES AND REGIONAL AUTHORITIES

- Make a critical examination of teaching programmes and methods and the training of instructors.
- Adapt the content of initial training to develop, from the earliest age, creativity, spirit of enterprise, etc.

MOBILITY OF STUDENTS, RESEARCH WORKERS AND TEACHERS

COMMISSION

- Put forward a wide programme aiming to enhance human potential in the Fifth Framework Programme for Research & Development (FPRD)(first half of 1997).
- Stimulate transnational "industrial PhDs" (placement of research workers/engineers in firms) (pilot action in 1997).
- Make Community aids to mobility more flexible (5th FPRD).

MEMBER STATES

- Adopt measures for the temporary secondment of research workers to firms, especially SMEs.
- Ensure that the conditions actually exist for mobility between research and enterprises (assessment of qualifications, career development).

INNOVATION AND MANAGEMENT OF ENTERPRISES

COMMISSION

- Promote organisational innovation through Community instruments at its disposal (framework programme, Structural Funds and training programmes, etc.) (1997/98).
- Introduce a benchmarking system at the European level (pilot project in 1997).

PUBLIC AUTHORITIES

COMMISSION

- Develop exchanges of experience on the promotion and dissemination of innovation in government offices and public services. Conference in 1997 and publication of a green paper in 1998.
- Compile a permanent trend chart of innovation performance and policies in Europe (to be put in place in 1997).

MEMBER STATES

- Develop initiatives to provide information and increase awareness among politicians and senior officials of what is at stake with innovation.

CURRENT ACTIONS

EDUCATION AND INITIAL AND FURTHER TRAINING

COMMISSION

- Implement the proposals of the White Paper on Education and Training (especially Erasmus apprenticeships, European apprenticeship statute).
- Pilot projects to encourage links between schools ("Learning in the information society" initiative).

MEMBER STATE AND REGIONAL AUTHORITIES

- Develop sandwich course training, especially at university level.
- Encourage the effective knowledge of several Community languages.

MOBILITY OF RESEARCH WORKERS, STUDENTS AND TEACHERS

COMMISSION AND MEMBER STATES

- Launch a debate on the Green Paper with regard to the mobility of research workers, students and teachers, and implement proven routes of action; examine and possibly implement the recommendations of the Veil Group.

RAISING PUBLIC AWARENESS AND INVOLVING THE PLAYERS

COMMISSION

- Develop initiatives to disseminate best practice in this field.

MEMBER STATES

- Foster a scientific and technical culture and awareness of the beneficial effects of innovation.

COMMISSION AND MEMBER STATES

- Involve enterprises, the public and their representatives in discussing major technological options.
- Develop measures to increase the involvement of employees, users or consumers and to facilitate the acceptance of innovation.

INNOVATION AND MANAGEMENT OF ENTERPRISES

MEMBER STATES

- Increase training activities for innovation management.
- Foster the development of the practice of "benchmarking" among enterprises.

PUBLIC AUTHORITIES

MEMBER STATES

- Stimulate competition in public invitations to tender and the use of performance standards.

II. Establishing framework



ELUREKA - ITSD90

The establishment of an environment conducive to innovation needs, in the first instance, competition to function properly. The next task is to introduce an effective system at an acceptable cost for the protection of intellectual and industrial property. This also involves constant efforts to lighten the burdens on enterprises, especially the administrative formalities, while maintaining the protection enjoyed by consumers with regard to health, safety and the environment. Lastly, innovators need to have easy access to the funding they require for the various stages of their projects, and their fiscal treatment should be conducive to innovation.

1. Legal, administrative and regulatory environment

Competition

Competition is one of the driving forces behind innovation. It is stimulated by efforts to combat monopolies and to open and liberalise markets. The Com-

mission has always devoted special attention to innovation in its competition policy. The Commission will therefore continue to ensure that competition functions properly in the internal market and internationally. It will continue its

action for the liberalisation and deregulation of sectors of the European economy that have hitherto been protected or too strictly compartmentalised. The Commission also proposes that further progress be made in the areas of mergers and vertical agreements.

Furthermore, it will continue its dialogue with the competition authorities in the United States, to allow approximation of the definitions of the relevant market, especially concerning agreements with a high technology input.

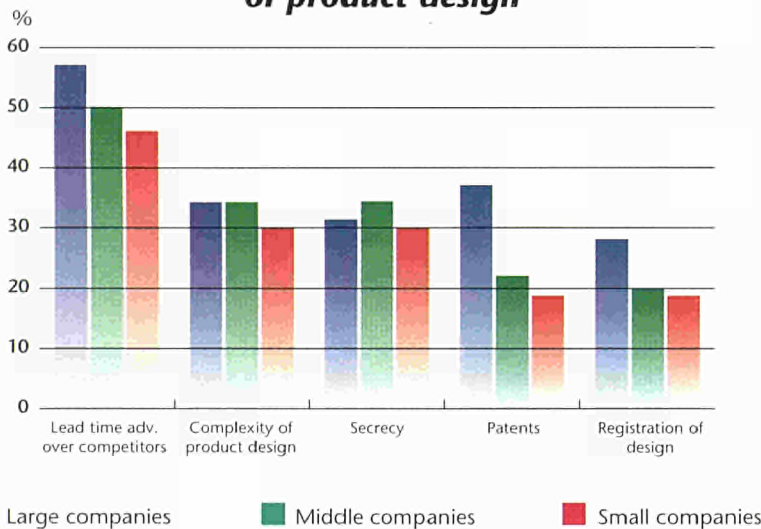
Protection of intellectual and industrial property

• Reviewing the overall structure

The overall structure of the European system for the protection of industrial property is far too complex. A "Community" solution has been adopted for trade marks and designs (Office for Harmonisation in the Internal Market in Alicante), as well as for plant breeding (Community Plant Variety Office, provisionally located in Brussels).

In the European Union there are currently three patent systems, only two of which are fully operational. There are national patents and also European patents, which are the result of the Munich Convention of 1973 and are administered by the European Patent Office in Munich. The European patent is not a uniform industrial property right but it

Methods used for maintaining competitiveness of product design



Source: CIS, Preliminary results

mission has always devoted special attention to innovation in its competition policy. The Commission will therefore continue to ensure that competition functions properly in the internal market and internationally. It will continue its

a favourable for innovation

allows protection to be acquired in as many European countries as the applicant wants. The advantage of this system is its great flexibility, but there are some drawbacks because of the complexity and cost. Also, there is no provision in the system for any court at European level with jurisdiction in patent disputes, which means that there is a possibility that courts in the Member States may make different rulings.

The overall structure of the patent system should be completed by the entry into force of the third system of protection, the Community patent, stemming from the Luxembourg Convention of 1975. This convention, which was amended in 1989, has still not entered into force because of delays in ratifying it by the twelve Member States that signed it.

According to the views expressed by users of the system, the European patent is generally satisfactory, although there are major changes that need to be quickly introduced. One of these changes concerns the patentability of biotechnological inventions.

As for the Community patent, the question is whether in its current form it still satisfies the objectives that were outlined at that time or whether it would be better to adapt it to progress in the construction of Europe and to the needs of users.

The Commission will prepare in 1997 a green paper on the issue of the Community patent. It is foreseen that this text will, in particular, consider:

- whether the Luxembourg agreement on the Community patent should be converted to a legal instrument under the Treaty;
- whether national patent conventions should be further harmonised at Community level;
- whether it is possible to adapt the system of taxes and duties in a way that corresponds to the services provided and is not a barrier to the protection of innovation.

Facts & Figures

• **The total cost of filing and maintaining a patent in eight Member States is about USD 120 000 compared with USD 13 000 for the whole of the United States.**

• **Products that have been on the market for two years or less account for 78% of income in the data processing industry.**

• **The biotechnology market, valued at less than ECU 10 billion in 1996, should be close to ECU 80 billion by the year 2000.**

• *Special case of biotechnology and the information society*

In advanced technology sectors, such as the information society or biotechnology, there are considerable economic imperatives involved.

The codecision procedure on the new draft directive on the legal protection of biotechnological inventions needs to be completed as quickly as possible. For its part, the Commission will play an active part in the consideration which is now getting under way with regard to the revision of Article 27 of the TRIPS agreement (agreements on intellectual property, in the framework of GATT) and the follow-up to the Convention on Biodiversity.

With regard to the patentability of software, currently impossible in Europe, and the repercussions of information society technologies on industrial property rights, the Commission recently started looking at the matter together with those concerned with a view, if necessary, to supplementing the harmonisation of the Member States' legislation. The Commission has also just adopted a Communication to

the Council and to the European Parliament; this one identifies four priority issues for which legislative proposals will be submitted soon (rights of reproduction, right of communication to the public, legal protection of the integrity of technical systems and rights of distribution).

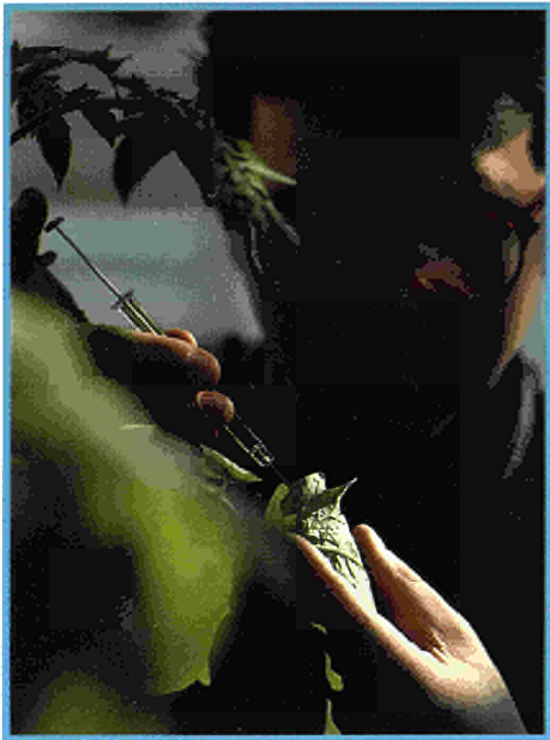
• *Other harmonisation methods*

In view of the major economic importance of designs and models and of the differences among the Member States with regard to design protection, the Commission will continue its efforts with a view to harmonising national laws and to create a body of Community law in that field. In the field of employees' inventions it will launch a study on the need for and possible content of harmonised national laws and will start a discussion of this topic with those concerned. Lastly, in the light of comments on its green paper on Utility Models it will make a decision on the advisability of draft Community legislation in this field.

In the key area of intellectual property the situation gives rise to concern, since only one directive has been transposed by all the Member States. The Commission asks the Member States in question to assume their responsibilities and to submit to their respective parliaments the required draft legislation by the end of 1996.

• *Reducing costs*

The Commission supports the efforts of the European Patent Office to cut the costs of filing and maintaining patents, such as the review of current requirements concerning translation (along the lines of the 1975 Convention on the Community Patent, which requires translations only for the summary and in the event of protection being invoked) and will study whether to introduce incentive measures for SMEs, individual inventors and universities ("small entity fee").



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• Promoting protection

Actions to make enterprises aware of the range of possibilities provided by the system for protection and training are needed. The Commission, in the Fifth Framework Programme, will reinforce its activities in this field, especially for the dissemination of information on patents.

• Combating counterfeiting

The Commission has ordered a study on the potential role of the Community, by way of supplementing national action, in combating counterfeiting and will start consultation on the basis of the results.

Administrative simplification

The Commission will put a proposal to the Committee on the Improvement and Simplification of the Business Environment for a special programme on innovation.

• Business start-ups

The formalities relating to business start-ups, together with all the other compulsory procedures, are generally more complicated and take longer for European enterprises than for their competitors elsewhere.

The studies and investigations that have been conducted have shown that some Member States had already started a sustained effort towards administrative simplification. In some countries

of the European Union, the formalities for starting up an enterprise have thus been reduced to a single form at a one stop shop. Other countries that have not adopted measures of this kind are called on to follow this example and to simplify the formalities for setting up new enterprises.

• Analysis of the impact of rules on innovation

In the area of the internal market, the Commission recently launched a pilot project designed to simplify legislation in four test sectors: the SLIM initiative (Simpler Legislation for the Internal Market), a testing ground for more ambitious actions. If

the pilot project is a success, the Commission will take account, when new sectors are being considered as part of the SLIM initiative, of the possible impact of the legislation on innovation and will ask the SLIM teams involved to attach the required importance to this aspect during their work.

• One stop shops to support innovation

The Member States where there has been no initiative along these lines are invited to provide SMEs with networks of one stop shops.

At Community level the Commission will disseminate good practice in this field and implement greater coordination among the various networks for research and innovation support that are its responsibility.

Company law

Initiatives are needed concerning the European company statute, the promotion of EEIGs and the joint undertaking or private company statutes.

• European company statute

The adoption of the European company statute would make it possible to lift certain obstacles to innovation that stem from the application of fifteen different legal systems and would help to attract the private capital that is needed for major innovation projects. Enterprises in Europe would benefit from a legal framework adapted to the internal market and world competition.

The Commission has set up a group of high-level experts responsible for presenting proposals which could resolve the impasse affecting European legal frameworks for companies.

• Other types of company

The European Economic Interest Grouping (EEIG) is an instrument for cooperation among enterprises which has already proved its worth for launching and managing innovative projects.

The Commission will encourage better dissemination of information on EEIGs.

It also seems useful to encourage the creation at national level of a simplified private company statute. A flexible legal instrument of this kind would help the formation of small enterprises and companies with private share ownership, which are often innovative.

Standards

The Member States (and, in their areas of responsibility, the European standardisation committees) are invited to encourage the adoption of voluntary standards between manufacturers and suppliers and, whenever possible in the technical rules and standards they issue and for public contracts, opt for performance standards, thereby ensuring greater freedom for designers of new products and stimulating competition among suppliers.

The Commission intends in its Fifth Framework Programme to devote more

Facts & Figures

• In 1994, industry in Europe spent about ECU 2 billion on legal or out-of-court proceedings to protect patents.

• Administrative and regulatory constraints cost far too much in Europe. Some studies suggest the cost comes to more than ECU 100 billion a year, particularly disadvantaging SMEs.

• It is estimated that the lack of a European company statute involves enterprises in an extra cost of ECU 30 billion every year.

attention to the links between research projects for the development of new technologies and standardisation activities (especially prestandards), as well as to the application of scientific knowledge to measuring performance (standardisation-oriented research and metrology). The Joint Research Centre (JRC) will have a special role to play in this latter area.

The Commission will catalyse initiatives of market players for the deployment of new standards applications through experimentation, validation and demonstration (pilot) projects.

The Commission will promote cross fertilisation between sectors by stimulating the assimilation of standardised products, services and best practices from highly innovative sectors into more classical industrial sectors.

2. Financial environment

Financing

The question of financing is one of the major priorities that emerged from the discussion prompted by the Green Paper on Innovation. In this field a lot depends on private initiative or on the national or regional dimension. The aims to be pursued include the areas described below.

For its part, the Commission has to ensure that the right framework conditions are in place, i.e. especially the effective introduction of the single market and compliance with the rules of competition. It also plans to work on ensuring that best practice is disseminated and facilitating their adoption, primarily through support for pilot actions but also by making full use of the Structural Funds and other existing instruments such as the EIB (European Investment Bank) or the European Investment Fund.

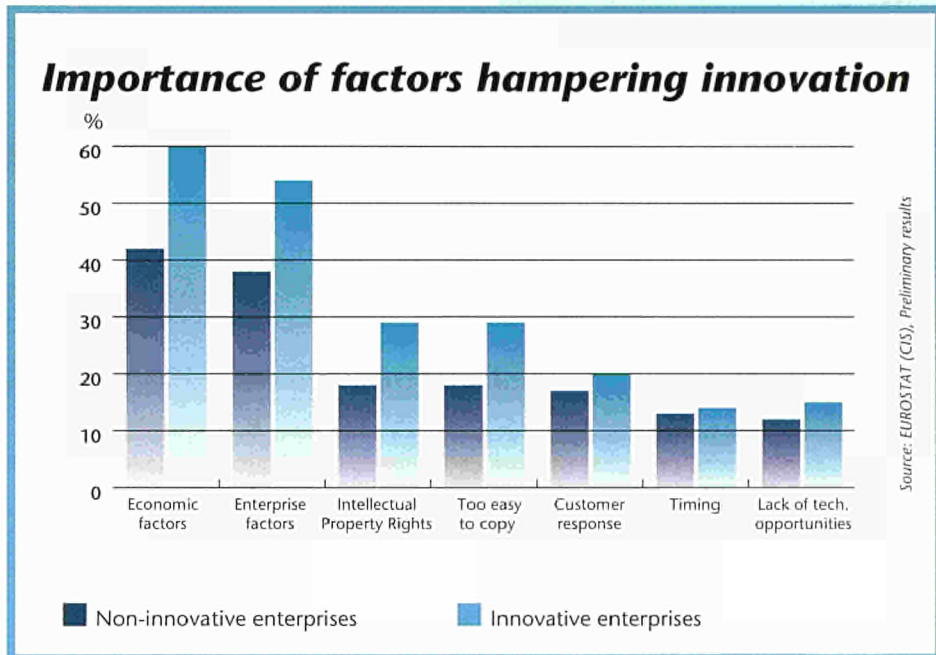
• Development of capital markets for high growth enterprises

The Commission will see to it that the framework conditions are put in place for the development and proper operation in Europe of stock markets for "growth enterprises".

• Investing in equity for innovation

The Commission will disseminate existing best practice to direct long term savings (pension funds, life insurance, save-as-you-earn schemes, "business angels") towards investment involving risk.

It will endeavour to consolidate the development of venture capital in Eu-



rope by encouraging the establishment of a favourable fiscal and regulatory framework in the Union and by favouring the establishment and use by the profession of performance statistics which could be evaluated in an objective and comparable manner at international level, especially with a view to facilitating the raising of new capital among institutional investors.

Also, as indicated in the Confidence Pact for Employment, the Commission plans to strengthen cooperation between the EIB and the Structural Funds in order to develop financial instruments for the benefit of innovative enterprises and projects in the least favoured regions.

In collaboration with the EIF (European Investment Fund), the Commission will study the possibility of introducing mechanisms to support venture capital investment which have already proved successful, in particular in the United States.

The Commission will endeavour to strengthen the actions of the European Investment Fund in favour of innovation by introducing a pilot mechanism to encourage venture capital funds in which the EIF will have holdings to invest in the early stages of investment and innovative projects.

• Developing interfaces between investors and innovators

The Commission will endeavour to improve access to private finance (venture capital) for those involved in Community research programmes (and Eureka). This could involve the setting up of an "Innovation Financing Help-Desk".

Statutory deductions

Given that intangible investment has a strong work content (research, training), it is much more affected than tangible investment by the steady rise in labour-related tax and social security contributions. This structural trend, which has been detrimental to employment, ought to be reversed, as was pointed out in the White Paper entitled "Growth, Competitiveness, Employment".

In 1997 the Commission will consider a communication on taxation and innovation which will take into account the effects of the trend in the structure of statutory deductions and which will propose to the Member States a number of "good practices" in this area, based on an analysis of national circumstances in the light of work under way in the Member States and the OECD.

The Commission will analyse means of promoting a fiscal and accounting treatment of intangible investment, especially in training, that is conducive to competitiveness. □

II. Synoptic table of main initiatives proposed in the Action Plan for

ESTABLISHING A FRAMEWORK CONDUCTIVE TO INNOVATION**NEW ACTIONS****PROTECTION OF INTELLECTUAL AND INDUSTRIAL PROPERTY****Commission and Member States**

- Launch of a Green Paper on the issue of the Community patent (September 1997).

Commission

- Set up a service of assistance on intellectual property (IPR-Helpline) for Community research (1997).

Member States

- Set up instruments to inform and help SMEs and universities in the event of disputes.

ADMINISTRATIVE SIMPLIFICATION**Commission**

- Introduce a pilot mechanism for the ex-ante assessment of the impact of regulations on innovation (end 1997).
- Implement operational procedures for coordinating Community innovation support networks (1997).

Member States

- Set objectives and a precise timetable for simplifying business start-up formalities.

Member States and local authorities

- Speed up the rationalisation of innovation support activities and bodies.

FINANCING**Commission**

- Reinforce EIF action in favour of innovation and cooperation between the EIB and the Structural Funds (beginning of 1997).
- Improve the links between Community research and risk capital, particularly through the provision of information and guidance services for those taking part in the framework programme and for investors (mid-1997).
- Develop the exchange of experience and the dissemination of best practice between Member states and operators (1997 and 1998).

Member States

- Introduce the framework conditions for stock exchanges for growth enterprises.
- Make greater efforts to direct "patient" capital towards risk investment.

TAXATION**Commission**

- Consider a communication on "taxation and innovation" (possibly in 1997).

Member States

- Promote fiscal and accounting treatment more favourable to intangible investment.

CURRENT ACTIONS**COMPETITION****Commission**

- Follow-up to the Green Paper on merger monitoring, extending the field of application of unified European monitoring of mergers and harmonising the treatment of joint structural enterprises.
- Publish a green paper on the application of the rules of competition to vertical agreements.
- Continue the dialogue with the competition authorities in the United States, to allow the bringing together of the definitions of relevant market, particularly in agreements with a high technology content.

PROTECTION OF INTELLECTUAL AND INDUSTRIAL PROPERTY**Commission and Member States**

- Complete the harmonisation of legislations to take account of developments linked to the technologies of the information society and supplement legislations on design protection and employees' inventions.

Commission

- Strengthen anti-counterfeit measures.

Member States

- Ensure the adoption of the proposal for a directive on biotechnological inventions.
- Support the efforts of the European Patent Office to reduce filing costs.
- Transpose the European directives on the protection of intellectual property into national legislation by the end of 1996.
- Develop training in this field.
- Make enterprises aware of the competitive benefits of protection.

ADMINISTRATIVE SIMPLIFICATION**Commission**

- Introduce into the work of the Committee for the improvement and simplification of the business environment a special action on innovation.
- Accord the required importance to innovation when simplifying administration (e.g. in the choice of sector under the SLIM project).

Member States

- Provide enterprises with one-stop shops for innovation questions.

LEGAL AND REGULATORY ENVIRONMENT**Company law****Council**

- Speedy adoption of a European Company Statute.

Commission

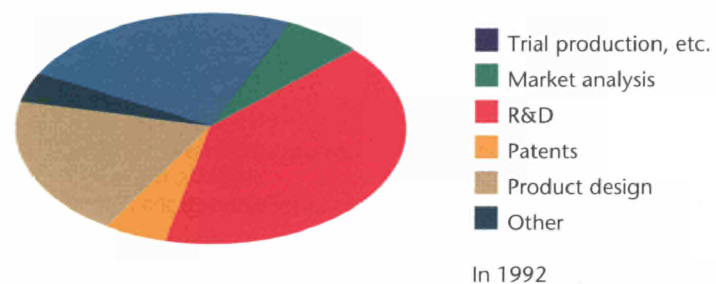
- Continue to encourage the use of European Economic Interest Groupings, especially by providing better information.
- Study the feasibility of creating a joint undertaking statute (Article 130N of the Treaty).

III. Gearing research to innovation

European firms have more difficulty than their competitors in turning the fruits of research into innovative products. The wide variety of situations in Europe means that this is not always true to the same extent, of course, but a number of indicators show that the efforts made so far have been inadequate.

Decision-makers and taxpayers regard an increase in research input as justifiable in a period of cuts in public expenditure and when businesses are striving to become competitive, if its advantages and spin-offs for society (health re-

Breakdown of innovation expenditures



Source: CIS, Preliminary results

search, environmental protection, energy savings, etc.) and for new products, processes or services are clearly perceived.

In knowledge-based economies, the efficient systems are those which combine the ability to produce knowledge, the mechanisms for disseminating it as widely as possible and the aptitude of the individuals, companies and organisations concerned to absorb and use it. The crucial factor for innovation is thus the link between research (the production of knowledge), training, mobility, interaction (the dissemination of knowledge) and the ability of firms, particularly SMEs, to absorb new technologies and know-how.

1. National measures with Community support

There are huge differences between national contexts, and all initiatives taken will need to be tailored to the situation in the country concerned. A number of general recommendations can nevertheless be applied according to the needs of each innovation system. They concern:

A long-term strategic approach to research

The Commission's role will be to:

- facilitate exchanges of experience between Member States in this sector;
- strengthen technology watch activities at European level.

The Commission invites Member States which have no experience in this area to consider pursuing this type of long-term approach (it will, if necessary, make a financial contribution from the Structural Funds).

The Commission will also set up a working party to examine the types of - and means of administering - research and technology transfer programmes best suited to the needs of firms in the services sector.

Strengthening research carried out by industry

Good practice, already fairly widespread but requiring strengthening in certain regions, includes:

- involving industry in defining research programmes;
- increased contract activities of public research centres and universities;
- generalised cooperative research programmes (of the COST or EUREKA va-

riety), requiring a minimum participation from businesses.

Member States are requested to draw up quantified and ambitious objectives aiming to increase the share of the Gross Internal Product dedicated to research, to development and to innovation, in particular by encouraging research undertaken by industry.

Start-up of technology-based companies

Actions for encouraging researchers and engineers to start up technology-based companies, whether within universities ("campus companies"), located in science parks or as spin-offs from large firms, need to be intensified.

The Commission meanwhile will begin in early 1997 to organise, as part of the Innovation Programme, a more thorough exchange with Member States on the best practice in this domain, involving leading players in the field. This exchange will concentrate on measures for facilitating the spread of such practice (covering intellectual property rights, social rights, financial arrangements, etc.) and national or regional promotion schemes.

It will support the dissemination of best practice through pilot projects.

Closer cooperation between public research, universities and industry

This type of cooperation needs to be intensified at national and regional level and geared more effectively towards innovation, start-up of new companies and, more generally, the transfer and dissemination of knowledge by:

- closer links between research and training, by anticipating the needs of the productive sector;
- opportunities for universities and researchers to spend some of their time developing a company;
- stimulating dialogue between the producers and users of technology.

The Commission will continue to analyse the existing barriers and

Facts & Figures



• Research and development represents another significant form of intangible investment for which European performance is insufficient. In spite of maintaining an advanced science base, total European spending on R&D at 2% of GDP is up to one-third lower than that of the United States (2.8%) and Japan (3.1%). Research undertaken and financed by industry itself is an area for which the European lag with the United States and Japan remains particularly large (1% of GDP compared with 1.6% and 2.2% respectively).

• Europe has not been using its advanced base in science and technology to the best advantage and indeed the European research base does appear to be less market-oriented than that of its major competitors. Product development makes up less than half of R&D spending in Germany and France compared with over 60% in the United States and Japan. In addition, fewer human resources are devoted to R&D. Scientific research personnel represent only 0.42% of the labour force, compared to 0.76% in the United States and 0.73% in Japan.

• Between 1984 and 1993, the European Union lost share in patents, the principal method of protecting intellectual property, for all sectors except aerospace and transport equipment. In terms of the total number of patents, however, these two sectors remain quite minor. In chemicals, the loss in share remained limited. The most significant loss took place in electronics, a sector in which R&D is highly intensive and which exerts considerable influence on innovation in the rest of industry through technology embedded in investment goods.

the factors conducive to this cooperation and will disseminate the results to interested circles on a wide scale.

It will support the efforts made at national, regional and professional level to improve the management of research and technology centres to gear them up for innovation and will organise transnational sectoral or trans-sectoral forums with the aim of setting up specific cooperation schemes, and will ensure that they are professionally organised and managed.

If the mechanisms enable key pilot schemes to be identified, the Commission will ensure that the necessary resources for trying out these innovative approaches are made available.

Expansion of SMEs' capacity for absorbing new technologies and know-how

This aim is to be pursued whatever the origin of new knowledge, methods and technologies. On a national scale this would involve such schemes as:

- enhancing the effectiveness and transparency of national or regional innovation support activities;
- developing the job of mediator - between research, technology and SMEs;
- easier access to external expertise, European or world-wide, particularly where organisation and management methods are concerned;
- helping to recruit or second researchers, engineers and technicians to SMEs.

The Commission will put forward, as

part of the Fifth Framework Programme, a coherent and reinforced set of initiatives for encouraging and facilitating the transfer, use and absorption of technologies, whether or not these were developed in the European Union.

It further proposes to give a considerable boost to the innovation support measures under the Structural Funds. Closer and more systematic coordina-



M. St. Maur Shell - EC.

tion will ensure that these initiatives are complementary.

These initiatives may include support for the first use of new technologies and for technology transfer schemes giving young innovative firms access to European or international markets.

Demonstration of effective approaches to innovation

The Commission, in collaboration with European industry, will put forward a new generation of transnational demonstration projects, many of them under the European Union research programmes, illustrating effective approaches to innovation and incorporat-

ing technical, organisational and social aspects, in order to:

- enable new methods, partnerships and services (such as intellectual property rights, project management and innovation financing) to be tested;
- show how to optimise the social benefits of technical innovation, particularly those affecting employment and improvements to working conditions but also involving the adoption of common standards.

The Commission recommends that industrial research projects take socio-economic aspects into account and will take steps to promote their incorporation into its own programmes, with the help of economic and social science experts.

It will take appropriate steps under the Fifth Framework Programme for Research and Development to support research and development schemes offering short-term and medium-term results and guaranteeing the environmental sustainability of production systems, and to facilitate the social acceptance of new technologies.

2. Incorporating the innovation and SME dimensions into the Framework Programme

This means totally re-engineering the Framework Programme. Its approach, implementation methods and management organisation therefore need to be adapted:

An integrated approach

The Research and Development Framework Programme approach needs to be

COMPARISON OF R&D EFFORTS WITHIN THE TRIAD

	EU15	USA	JAPAN
Total R&D expenditure (in MECU), 1994	121 882	142 047	104 069
Total R&D expenditure as % of GDP, 1995	1.91	2.45	2.95
Total R&D expenditure per inhabitant (in ECU), 1994	329	545	833
% of total R&D expenditure financed by the state, 1993	39.6	39.2	19.7
% of total R&D expenditure financed by industry, 1993	53.5	58.7	73.4
Number of researchers, 1993	774 071	962 700	526 501
Number of researchers per thousand persons in work, 1993	4.7	7.4	8.0
Number of researchers in business enterprises, 1993	376 000	765 000	367 000
Number of researchers in business enterprises (per thousand employed in business), 1993	2	6	6

Source: EC, DG XII, based on OECD data

an integrated approach. The Green Paper debate has confirmed that research and technology in general were merely one aspect of innovation - an important one, of course, but insufficient on its own. The organisational, management, market, financial, legal, protection, etc. aspects will be taken into account more systematically.

Adapted approaches to implementation

The ways of implementing programmes and projects will be adapted, primarily with a view to:

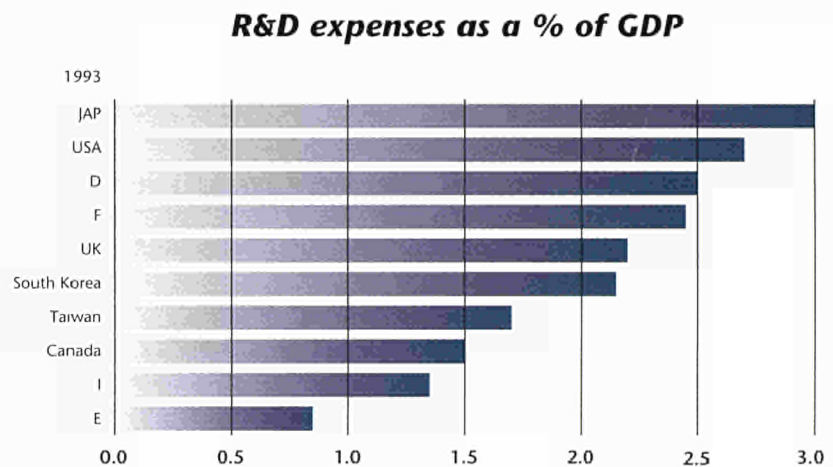
- determining the overall technological aims and content of the work programmes for specific programmes, taking account of the main factors affecting innovation in their own spheres of activity;
- revision or stricter application of the evaluation criteria for project proposals to place more stress on the novelty of proposals;
- encouraging preparations to exploit and disseminate results during the research stage by making available to the contractors new instruments, methods or good practice and support services for innovation and technology management, intellectual property, access to sources of private finance, etc;
- aiming at maximum user-friendliness for SMEs: faster procedures, a single interface and a system of rolling calls for proposals with a two-stage submission procedure;
- strengthening the measures taken (methods and resources) under the specific programmes in order to promote the exploitation of their results and dissemination of know-how etc., mainly through demonstration programmes.

Coordinated management

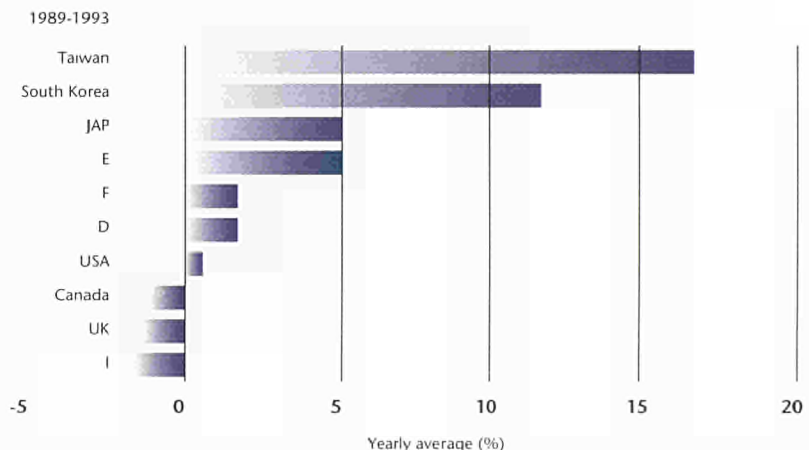
Accepting that large companies have an important role to play in the Innovation process, in particular through their collaboration with smaller firms, this action should give more SMEs access to all research work and its results, develop technology transfer and stimulate innovation. This will call for closer coordination of the various initiatives so as to ensure:

- better overall consistency, optimum exploitation of synergies between the various initiatives and increased visibility for action in support of innovation and SMEs;
- an integrated range of services de-

R&D expenditures (as a % of GDP) and their evolution for selected countries



Real growth in R&D expenditures



Source: World-Wide report on competitiveness, World economic forum, IMD

signed specifically for different categories of SME (including intellectual property rights, innovation management methods and access to risk capital).

The proposed programme "Innovate and enable SMEs' participation" should boost and effectively coordinate efforts to innovate, to disseminate technology and to promote greater participation by SMEs in research.

Finally, the positive experience of the Research-Industry Task Forces will be capitalized upon in the Fifth Framework Programme for Research.

3. Mobilising other Community instruments

Gearing the Structural Funds more towards innovation

Not all regions have equal innovation capacity. Statistics show that the tech-

nology gap between the developed and less-developed regions of the European Union is twice the size of the "cohesion" gap, and various factors threaten to widen the gulf still further. The region is thus becoming a particularly appropriate level for promoting and strengthening innovation in Europe. Moreover, the links between cohesion, research and innovation can be managed more easily at regional level.

In addition to the action taken to promote innovation throughout the European Union, the Commission has implemented initiatives for strengthening the importance given to innovation in the Structural Funds. Most Commission initiatives such as the SME initiative (strengthening the competitiveness of SMEs), ADAPT (adapting workers to industrial changes) and LEADER II ●●●

III. Synoptic table of main initiatives proposed in the Action Plan for

GEARING RESEARCH TO INNOVATION**NEW ACTIONS****NATIONAL MEASURES AND THEIR COMMUNITY BACK-UP****STRENGTHENING RESEARCH CARRIED OUT BY COMPANIES****Member States**

- formulate quantified objectives and put in place the appropriate incentive policies.

START-UP OF TECHNOLOGY-BASED COMPANIES**Commission**

- organise thorough exchanges with Member States and players in the field on legal, fiscal and promotional measures (1997).
- launch pilot schemes for disseminating good practice, involving universities, risk capital, industry and regional institutions (1998).

INTENSIFIED COOPERATION BETWEEN RESEARCH, UNIVERSITIES AND COMPANIES**Member States**

- set up a legal framework to facilitate exploitation by research organisations, including business start-up.

STRENGTHENING THE ABILITY OF SMES TO ABSORB TECHNOLOGIES AND KNOW-HOW**Member States**

- support transnational technology transfer.

Commission and Member States

- better links between national and regional innovation systems at Community level.

DEMONSTRATION OF EFFECTIVE APPROACHES TO INNOVATION**Commission**

- set up a new generation of demonstration projects integrating the technical, organisational and social aspects of innovation (5th Framework Programme for Research & Development - FPRD).

INCORPORATING THE INNOVATION AND SME DIMENSIONS INTO THE FRAMEWORK PROGRAMME FOR RESEARCH**Commission**

- adapt the implementation procedures for the Framework Programme (project selection criteria, faster project selection, more demonstration schemes, legal framework for contracts) (4th & 5th FPRD).
- strengthen the consultation and coordination role of the research-industry Task Forces (5th FPRD).
- develop a programme "Innovate and giving SMEs greater involvement and providing an integrated approach to the goal of innovation through the legal and financial treatment of projects, particularly those supporting SMEs (5th FPRD).

MOBILISE OTHER COMMUNITY INSTRUMENTS**Commission and Member States**

- prepare to flesh out the action plan in various priority sectors and fields of technology.

CURRENT ACTIONS**NATIONAL MEASURES AND COMMUNITY BACK-UP****A STRATEGIC VISION OF RESEARCH AND DEVELOPMENT****Member States**

- consultations on long-term technology forecasting (Foresight).

Commission

- facilitate the exchange of experience and the exploitation of results on a Community scale.
- stimulate the technology watch (network of national organisations around the European Science and Technology Observatory (ESTO)).

START-UP OF TECHNOLOGY-BASED COMPANIES**Member States**

- stronger promotion of "campus companies" and spin-offs.

INTENSIFIED COOPERATION BETWEEN RESEARCH, UNIVERSITIES AND INDUSTRY**Member States**

- pursue and strengthen action in this area.

Commission

- analyse the obstacles and disseminate good practice.
- support national efforts to improve the management of research and technology organisations and their international benchmarking.
- organise sectoral and inter-sectoral technology platforms.

STRENGTHENING THE ABILITY OF SMES TO ABSORB NEW TECHNOLOGIES AND KNOWLEDGE**Member States**

- improve the efficiency and transparency of support structures.

Commission

- help professionalise the innovation support services.
- set up a scheme for promoting the absorption and use of technologies (first-use support, access to technologies not developed in the European Union, internationalisation of young technology-based firms, regional projects).

DEMONSTRATION OF EFFECTIVE APPROACHES TO INNOVATION**Member States and Commission**

- make better use of specialists in the social and behavioural sciences in technology projects.

MOBILISE OTHER COMMUNITY INSTRUMENTS**Commission and Member States**

- direct more of the Structural Funds towards innovation.
- make the most of the international dimension of innovation.



(rural development), as well as Article 10 of the ERDF (European Regional Development Fund), give innovation high priority. Moreover, innovation is one of the priorities of the new directives concerning Objective 2, which states that "innovation is essential for maintaining competitiveness and employment".

In the Objective 1 (regions lagging behind in development) and 2 (regions affected by industrial decline) regions, the Commission recommends that Member States and local or regional authorities concerned take fully into account the necessity to concentrate the measures for innovation, and particularly research, devel-

opment, technology transfer and qualifications for workers, in order to satisfy the priority given to employment. In rural areas, in particular Objective 5b, the Commission will seek, within the framework of strategies for employment, to disseminate as widely as possible the good practice identified and validated by the European

Innovation and rural development Monitoring System within the framework of the LEADER II initiative. Under Objective 4 (adapting workers to change) of the Community initiative ADAPT, efforts will need to concentrate on innovation action, particularly on anticipating requirements and improving training systems, and helping SMEs to manage their human resources more efficiently.

Making the most of the international dimension of innovation

Action in support of innovation should take account of the globalisation of technologies and markets. Flows of information, knowledge and capital are accelerating and multiplying on a world scale. Incorporating this dimension means taking several complementary approaches:

- Closer interaction between the Framework Programme and the COST and EUREKA cooperation frameworks;
- Support for international industrial cooperation and promotion of collaboration between firms on the basis of bilateral agreements;
- Intensified international RTD cooperation with non-member countries.

Fleshing out the action plan in various priority sectors and fields of technology

Some of the proposals in this action plan may prove to be suitable to specific sectors or technologies and adjustments will be necessary. The Commission will, as far as is possible, arrange for effective cross-over learning by setting up inter-sectoral and inter-technology links. Efforts will be made to take more account of the preoccupations of industry when policies are drawn up.

The fields to be fleshed out include better exploitation of space and dual-use technology, rural development, consumption and the audio-visual sector as well as the environment and the services sector. □



M. St. Maur Shirell - E.C.

IV. Conclusions

In the three main fields identified, the Commission is putting forward those measures whose priority, expected impact or urgency has been confirmed by the debate.

At Community level, these measures can be financed from existing or planned budgets without additional funding.

The main effort must, nevertheless, be made at local, regional or national level. Action in support of innovation must be first and foremost the province of the Member States and those active in the field - above all companies.

A more thorough analysis will be needed to take account of the wide variety of situations in the Member States. The Commission proposes to organise this in close collaboration with the Member States, so as to establish a joint reference framework and so help them identify the priority options and the opportunities for cooperation.



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There are three appendices to the Action Plan:

1. Reactions to the consultations on the Green Paper on Innovation
2. Recent developments in innovation policy in the Member States of the European Union
3. Statistical tables

It requests Member States to take the necessary steps to ensure, on an internal basis, efficient coordination of the measures deriving from various policies and, on an external basis, optimum interaction with the other Member States and with the European Union.

The Commission will draw up a detailed implementation schedule and will precisely quantify the costs of the measures it is proposing. On this basis it will submit the corresponding legislative and regulatory proposals to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions.

The Commission will report regularly to the European Council on the implementation of the action plan, including, where necessary, proposals for any adjustments or additions which may prove necessary in the light of developments or in view of the specific contexts in which the plan is applied.

The enthusiasm and energy demonstrated must be mobilised in order to implement this Action Plan and so build a more innovative, competitive and job-creating Europe. □

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TO OBTAIN THE ACTION PLAN

- The complete text of the first *Action Plan for Innovation in Europe*, approved by the European Commission on 20 November 1996, will be available in all the official European Union languages. It can be downloaded from the CORDIS Internet site.

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The Green Paper on Innovation

- *The Green Paper on Innovation*, published by the Commission in December 1995, has served as a basis for five months of discussion and debate on this topic throughout Europe, leading to the drafting of the First Action Plan for Innovation in Europe. The text of the Action Plan is available in all official languages of the European Union, and can be downloaded from the Cordis Internet site.

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