

THE COMMUNITY'S CONTRIBUTION TO INNOVATION
AND TECHNOLOGY TRANSFER

The Sprint programme



European File

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The ability to innovate is without doubt a particular and essential characteristic of human nature. It has a fundamental role in the development of civilizations. In the present context of rapid technological progress and ever-closer interrelation of economies, the future of our societies depends more than ever on their capacity for innovation. This capacity affects growth, the creation of employment, social and cultural progress, the raising of living standards, improvement of the environment, etc.

Until recently Europe was one of the world's richest sources of innovation. However, the international economic crisis and the effectiveness of competition from America, Japan and elsewhere have called Europe's position into question, particularly in the development of new advanced technology. Europe must reactivate all its misused and underexploited potential for innovation, not just in order to remain among the leaders, but even to stay in the race and avoid serious economic and social decline.

For several years, the European Community authorities have been aware of this need. On different occasions, at meetings of the European Council, the Heads of State or Government of the member countries have underlined the priority to be given to improving businesses' capacity for innovation. The Luxembourg agreement of December 1985, on a 'Single Act' revising the Treaty of Rome, solemnly made it one of the essential aims of the Community to reinforce the scientific and technological bases of European industry and improve Europe's international competitiveness.

It was in this spirit that the European Community's Council of Ministers launched, in November 1983, a first plan for the transnational development of infrastructure to assist innovation and technology transfer. This Community initiative proved a rich and varied testing-ground. It has completed its first three-year phase and is to be continued after 1986 under a new name: Sprint (Strategic programme for innovation and technology transfer).

The complex process of innovation

To understand the scope of Sprint one must first outline the numerous and complex problems involved in innovation and technology transfer.

- Innovating means more than inventing. It means, in the widest sense, conceiving a new idea and realizing it in concrete form. The result can be a product, a process or a service. The idea may be engendered at random in laboratory research, but it can also result from a new application for existing material or know-how, or simply the perception of certain potential market needs which have not yet been catered for. The scope for innovation is not, therefore, limited to new technologies; it can – and must – be extended to the most traditional sectors and to all kinds of economic, social and cultural services. For innovation to be achieved, the original idea must be fully worked out in practice, far beyond

the stage where any patent is filed, to the point where it is in a form to be commercially viable.

In any case, a successful innovation involves a series of extremely varied steps. The creation of new products or processes may require long months or years of thought on the scientific and technological level, with all the investment and risk that that implies. There may then be a need for prototypes and simulations, an industrial design, the development of mass production capacity. In addition, whether material goods or services are involved, to make an economically profitable reality of an innovation requires in-depth studies of the market, particularly for exports, establishment of efficient distribution networks, launching of publicity campaigns, etc. The overall realization of the project, therefore, requires a variety of financial means and often various partners to support the different stages of the process. The 'perfect innovator' would have, not only his two fundamental qualities – a come-what-may spirit of enterprise and hard-nosed management ability – but also a whole range of competences that he could call into service: scientific, technical, legal, financial, commercial, etc.

- Technology transfer is closely related to the idea of innovation and is one of its most important instruments. It can be either vertical or horizontal. Vertical transfer is the classic process in which an innovation is achieved by passing from the research stage to that of industrial production. Horizontal transfer occurs when the discoveries or techniques of one laboratory or business are put into effect by another research or production unit. Technology transfer of this kind is not simply a matter for relations between industrialized and developing countries. On the contrary, it is a universal phenomenon, independent of levels of development. The art of exploiting to the full the scientific and technological knowledge available throughout the world is a strategic option which Japan, for example, has used with remarkable success to increase its capacity for innovation. After all, the person who acquires a piece of technology is not the only one to benefit from it: provided all the precautions (patents, etc.) are taken to protect his 'intellectual property', it is often in the interests of the owner that the technology be exploited as widely as possible in multiple applications.

Technology transfer is a complex process and recourse to specialized intermediaries is often worthwhile. It involves combining the possibilities of the owner's know-how with those of the acquirer's and requires, first of all, open contact and understanding between the individuals concerned. Experience shows that this human factor must be taken into account.

Because of their flexibility and autonomy when quick decisions have to be taken, small and medium-sized enterprises (SMEs) can be very effective agents of innovation and technology transfer. They do not, however, have all the specialized personnel required. They often need skilled support for their approach to markets, for their research into modernization or diversification and for the development of new products, processes and services. If they are to flourish the SMEs need back-up, a favourable environment. To be better at innovating, these enterprises must have

easy access to specialized external bodies, public or private, that can give them indispensable advice and information.

The European innovation programme was specially intended to help the SMEs. It aims to strengthen this assistance infrastructure, particularly by developing its transnational aspect.

The transnational aspect has become a necessity. Europe must compete with the Americans and Japanese, who have very large markets. European firms can fully develop their capacity to innovate only in a framework much wider than the country in which they are established. Innovation, at both the initial conception stage and that of practical application, increasingly demands an opening-up to external cooperation. As for marketing, a new product or service, particularly if it involves advanced and very specialized technology, is less and less likely to reach its profitability threshold in a national market of 10 or even 50 million consumers; it could do so if it were aimed at the 320 million potential buyers in the Community of Twelve.

The creation of a common market, by abolishing customs barriers between Member States, was a first step of fundamental importance in this direction. However, in the areas of research, technology transfer and commercial strategy there are many other hindrances (administrative, legal, technical, fiscal or linguistic) to the exchanges and collaboration so absolutely necessary to businesses — particularly to SMEs. By systematically adopting a transnational approach, the Community's innovation programme aims to overcome these obstacles, whether they be legal, human, social or geographic. It thus forms part of the process of creating the 'big market without frontiers', which in the recent revision of the Treaty of Rome has been made another essential objective of the Community.

An original strategy

According to the experts, there are two key conditions of prime importance to the development of the innovation process: one is the organization of contacts between people of different backgrounds and skills, the other is the creation of a vast melting-pot of ideas and information. The Community's innovation programme is based on this two-fold central idea. For its first experimental phase (1984-86) it had a modest budget of 10 million ECU.¹ There are three main axes: promoting direct transnational contacts between agencies for fostering innovation in SMEs, improving the tools for information and communication, and developing cooperation between Member States of the Community.

- The first axis has been primarily concerned with human networks and liaison mechanisms. The approach has been to promote infrastructure that aids in-

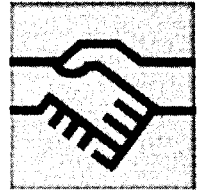
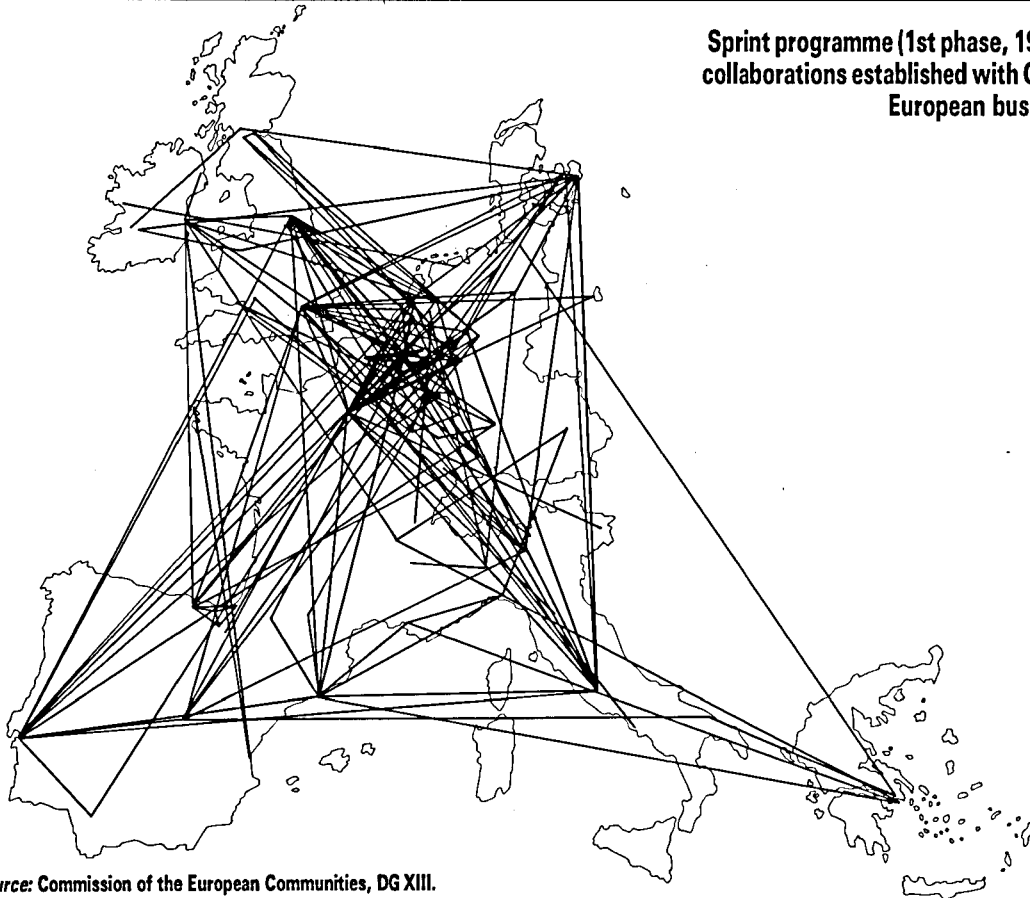
¹ 1 ECU (European currency unit) = about £0.73, Ir. £0.76 or US \$1.05 (at exchange rates current on 6 October 1986).

novation, rather than to intervene directly in enterprises. Action has been concentrated on public and private advisory bodies that assist SMEs: chambers of commerce and industry, regional development agencies, innovation centres, private consultants, venture capital organizations, etc. However, the essential purpose of increasing transnational contacts between these intermediaries is to encourage contacts of the same kind among the firms they advise. Community initiatives of this kind include:

- The creation of a transnational cooperation network involving many advisory bodies. Three successive calls for proposals were launched and 70 collaboration projects selected; the result is a network of 170 bodies in which participants are linked together in partnerships of two or more from different member countries (see map). The projects selected participate in a joint action programme, under which the advisory bodies undertake to encourage innovation by SMEs and particularly to seek out, on behalf of their SME clients, partners in other member countries for new projects and for the acquisition and transfer of technology. Financial aid from the Community covers half the cost of personnel, travel and translation required for these joint programmes. This is the main activity under the Community plan for innovation and it has received more than a third of the plan's budget. It has also highlighted the need for complementary activity in other areas that are just as important for innovation: a new drive has recently been launched to encourage transnational cooperation in technology transfer among sectoral collective research centres such as the 'centres techniques industriels' of France and Belgium and British industrial research associations.
- Aid for the launching of professional associations of European business advisory bodies. Since 1984 the Community has helped to get under way the European Association for the Transfer of Technology, Innovation and Industrial Information – usually referred to more simply as TII. It has a membership of some 200 advisory bodies in all the Member States. The Community covers part of the initial running costs and also supports certain specific activities, such as short or medium-term secondments which allow specialists in innovation and technology transfer to be exchanged among the advisory bodies of different Member States, or group visits of a regional character during which members of these bodies and SME managers can meet their counterparts in other countries. Since the end of 1983 the Community has also been supporting the launch of the very dynamic European Venture Capital Association (EVCA), which has nearly 130 members in the various Member States. They are specialists in the field of venture capital: the kind of investor that plays a decisive role in promoting innovation, by helping firms to find the capital they need in the form of equity rather than loans.¹

¹ It should be pointed out that, outside the framework of this programme, the Community has also financed in 1985 a pilot project called 'Venture consort' which gave direct capital aid to consortiums of venture capital organizations established in various European countries, for transnational innovation projects among the Community's SMEs.

Sprint programme (1st phase, 1984-86): transnational collaborations established with Community aid among European business advisory bodies



Source: Commission of the European Communities, DG XIII.

- Support for the organization of transnational visits to specialized technology fairs. These are occasions of special importance for contacts and meetings that promote innovation and technology transfer. It has been found that individual managers of SMEs visiting them from another Member State often run into difficulties, because of the scale of these events and the linguistic and other barriers that can be encountered. As a pilot project, the Community is subsidizing collective visits to technology fairs for regional groups of businessmen and consultants from other Member States.

These actions, concentrating on the development of transnational contacts and collaboration, are part of a strategy for the gradual creation of a real European grid of networks of intermediaries. By getting to know one another better, by comparing their methods, by exchanging information and business opportunities, these specialists come to work concretely and directly on the transnational dissemination of innovation and technology transfer in SMEs. In all, in the first three years of operation of the Community programme, nearly a thousand bodies of all kinds have been involved in this process.

- The object of the second axis of the European innovation programme is the reinforcement of certain structures under two headings: circulation of ideas and information, and tools for communication. Among the Community initiatives of this kind are:

- Aids for the 'Europeanization' of conferences on technology and innovation. As these debates play a fundamental role in the spread of knowledge, the organizers can obtain financial aid for the participation of specialists from other member countries and for translation and dissemination throughout the Community of accounts of the proceedings. Three calls for proposals have been launched since 1985 and more than 60 conferences selected to receive support of this kind.
- Arrangements for systematically sending to trade journals synopses of reports on public research work in the different Community countries. This project, called 'EuroTechAlert', is based on an experiment carried out in the United Kingdom: there it was possible to disseminate to businesses many research findings which up to then had been under-used and which constitute an important potential source of innovation. Various Member States have agreed from now on to cooperate on a programme of this kind and to set up the national machinery for supplying and disseminating such synopses. The Community looks after translation costs and the central management of the system.
- Preparation of a computerized index which allows comparison of technical standards: national, European and international. This data bank, christened 'Icone', is intended to help businesses to overcome the obstacle to innova-

tion development posed by the existence of more than 80 000 national standardization documents, of which more than 60% still have hardly any European or international equivalent.

- Several specific measures to allow certain regions, that have inadequate infrastructural support for innovation, to participate fully in the Community's various transnational projects. Greece has received Community aid of this kind to develop its system of protection of industrial property and to set up sectoral centres for technological information. Ireland has also been given support for an experimental project to promote robotics in SMEs.
- The third segment of the Community programme is aimed at developing the indispensable cooperation among those responsible at national and Community level for promoting innovation and technology transfer. It involves taking stock of and comparing experiences and achievements, avoiding duplication where it arises, uniting forces to pursue lines of action already under way and jointly exploring new possibilities. Worthy of mention in this connection are:
- The compiling of a single directory for the whole Community (including Spain and Portugal) of public aids for research, innovation and technology transfer. This catalogue of all the incentives and initiatives of national authorities in the fields of taxation, collective research, venture capital promotion and regional development is published in London by Kogan Page Limited. It is a guide for industrialists, as well as a source of reference and comparisons for administrations.
 - The launching of a series of studies on the ways national authorities ensure optimal use of the results of publicly-funded research. These studies could later serve as the basis of a system for transnational dissemination of such results.
 - The formation of a working group to develop cooperation between Member States and the Community in the field of industrial design: the process of seeking — often using very sophisticated techniques and materials — a synthesis of aesthetics, user requirements and product price. There has also been a first allocation of aid to design promotion projects jointly undertaken by specialized organizations in the various Member States: joint publication of manuals, a travelling exhibition, transnational collaboration among businesses, etc.
 - The setting-up of another working group to study possible improvements in the operation of national systems for protecting industrial property, in order to stimulate innovation.
 - Recent intensified concertation for the promotion of innovation in certain traditional industrial sectors: textiles, leather and footwear, traditional ceramics, etc.

A long-distance Sprint

Innovation means letting the imagination hold sway. The promotion of innovation itself demands the imagination to deploy a wide range of means to stimulate the process. The first phase of the Community programme has enabled an assortment of initiatives and projects to be set up. These experiments have been conceived and prepared with the active participation of the interested parties. Throughout the programme there has been a two-fold confrontation of people, their ideas and their practices:

- In the first place, the conception of the programme and its execution, for which the European Commission was made responsible, have been under constant assessment and evaluation by an advisory committee of senior civil servants assigned by the Member States. This committee has played a very active role, especially in stimulating the various working groups already mentioned.
- Secondly, since the programme got under way, various symposia, colloquia and seminars have been attended by both consultants and managers, enabling them to formulate their own needs and expectations.

At the moment it is still difficult to evaluate the results obtained in this first phase of Community action. However, first indications testify to the success of the programme, despite its recentness and the delays inherent in all innovation and technology transfer processes. In transnational collaboration, for example, the preparation, negotiation and conclusion of technology transfer agreements between firms all take time. None the less, the stimulation of joint activities by advisory bodies has already led to several hundred contacts between SMEs in different parts of the Community. Dozens of concrete agreements have already been concluded.

Such efforts should have continuity. That is why the European Commission has proposed to the Council of Ministers a draft decision on continuing and enlarging the programme for a period of two years (1987-88), so that activities already embarked on may be pursued in more depth and extended to the two new Member States of the Community, Spain and Portugal.

In the immediate future, the proposal to extend Sprint would provide for:

- The organization of training activity for specialists to advise SMEs on innovation and financing it and on technology transfer;
- The establishment of liaison mechanisms between local authorities in Community countries; these could play a very active role in promoting innovation, both through their procurement policies for equipment, goods and services, and by creating a favourable environment for innovative firms.

On a wider scale, Sprint should also enable preparations to be made for an ambitious five-year programme, beginning in 1989 and answering the requirements of economic operators.

After its next phase, which is seen as a 'definition' stage, Sprint could reach its cruising speed and become, in the long term, the instrument of a Community innovation assistance programme.¹ ■

¹ For more complete or detailed information about Sprint, please contact the Commission of the European Communities, DG XIII A, L-2920 Luxembourg – Tel. (352) 4301 2918.

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