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TOWARDS TRANS-EUROPEAN NETWORKS

- PROGRESS REPORT -

(Communication from the Commission
to the Council and the European Parliament)

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SUMMARY AND CONCLUSIONS

1. The internal market, which is being completed in accordance with the guidelines set out in the Commission's White Paper of June 1985 and with the Single European Act, requires adequate, appropriate infrastructures if free movement in an area without internal frontiers is to be ensured, as set out in Article 8a of the EEC Treaty.

The requirements of the functioning of the internal market can be compared to those of a growing organism. It must possess four essential elements: a blood circulatory system (transport infrastructures), a nervous system (telecommunications infrastructures), a muscular system (energy infrastructures) and the cerebral system (training infrastructures).

2. In response to the conclusions of the Presidency of the European Council of 9 December 1989, the Commission was invited in the Council's Resolution of 22 January 1990, to draw up by the end of 1990 "a work programme and proposals for appropriate measures, taking into account the possibility of extending such action to the whole of the Community and without prejudice to the distribution of work among the various formations of the Council" and to submit "a progress report in the first half of 1990".

This report is the Commission's initial response to the above request and prepares the ground for the drawing up of the guidelines that the European Council at Dublin requested to be submitted by the end of the year.

3. The discussions have been conducted by the Commission, in close association with a group of government representatives which met on three occasions and with the representatives of industry, primarily from the user viewpoint. They established that it would be worthwhile:

- to examine in detail, in coordinated fashion, the impact of the internal market on infrastructure requirements, highlighting the deficiencies which that impact can be expected to reveal;
- to identify the initiatives, both current and planned, which meet these requirements;
- to determine the new measures that will have to be taken in order to reach, as soon as possible, the level of infrastructure required by the advent of the internal market.

4. The report surveys the various priority fields for applying the approach adopted, systematically summarizing, in each case, the impact of the internal market, the problems that result and the solutions that are being carried out, planned or are still to be proposed.

The report shows in the process that, although several initiatives are already being or are about to be taken, all the necessary infrastructures are not yet in place, and will not be by 1 January 1993, and that their emergence is delayed not just by discussions of a budgetary nature (for example, the difficulties encountered in the adoption of a multiannual programme for transport infrastructures of Community interest), but also by the slowness with which decisions are taken (for example, in the adoption of 15 specific programmes stemming from the framework programme for research and development), or other qualitative factors.

5. Considerable efforts should be made in certain cases to:

- intensify coordination between the various decision-making levels, applying the principle of subsidiarity;
- improve coordination with national governments where projects have a Community dimension and increase awareness of this dimension.

6. The discussions that have taken place also highlight the technical obstacles to the emergence of trans-European networks: all too often, such networks do not exist, or are inadequate, because they are not interoperable, owing to a lack of prior consultation on technical options and on common technical standards.

7. The interest groups concerned (producers, users and governments) are showing great interest in the approach adopted with regard to trans-European networks. It is important that they should be able to react to this report and say whether the requirements identified correspond with their own conception and whether new initiatives will have to be taken in order to meet them.

8. Deliberately, the report does not discuss the essential aspect of network financing. It was agreed that this should be examined more thoroughly in the second six months of the deliberations. At this stage, the Commission would point out that:

- (i) the cost-effectiveness of infrastructure projects must be considered with great care, so as to attract as much private financing as possible;
- (ii) the mobilization of the Community's financial and budgetary resources must take account of the need to establish the trans-European networks necessary for the functioning of the internal market.

The Commission would also point out that the Community is already devoting considerable resources to the implementation of infrastructure projects, as the following three examples show:

- between 1975 and 1988, the ERDF provided approximately ECU 20 billion towards the financing of 3 354 infrastructure projects; the doubling of the ERDF funds for the period 1989-93 gives an idea of the possibilities open to eligible regions where networks could be installed;

- between 1985 and 1989, the European Investment Bank granted 6702 MECU in loans for projects of Community interest in the transport, telecommunications and energy transmission sectors, i.e. 53 % of all the loans granted by the EIB to projects of community interest, or 16 % of all the loans granted by the EIB during that period.

- the adoption of the framework programme for research and technological development for the period 1990-1994 provides a legal and financial basis for the promotion of transeuropean telematic systems and training networks, with an action concerning telematic systems of general interest, which should receive an estimated budget of 380 MECUS, and with another action regarding the mobility and networks of scientists (493 MECUS).

INTRODUCTION

Following preliminary work done by the Commission, the need for a Community-level discussion of the infrastructures, both physical and intangible, essential to the completion of the internal market was recognized by the Council in the second half of 1989. There are three reasons behind this:

- (i) the achievement of the four basic freedoms within the Community will improve the allocation of resources and, through the resulting very substantial increase in intra-Community trade in goods, services and capital, generate growth;
- (ii) the benefits to the economy will materialize only if, and this is imperative, there is a network of adequate infrastructures, in both physical and technological terms;
- (iii) unfortunately, at present, such systems either hardly exist, or are not emerging fast enough, or are prevented from being "interoperable" by the absence of certain links.

The present communication on trans-European networks is the progress report which the Commission undertook to submit in response to the Council's Resolution of 22 January 1990. It should also be regarded as a preparatory phase of the guidelines which the European Council in Dublin requested to be agreed upon before the end of the year.

After summarizing the mandate given by the Council to the Commission and the conclusions of the European Council in December 1989, the report, in Part I, surveys the Commission's activities in the first half of 1990. These concerned the identification of requirements, the examination, together with the Member States, of four priority areas, and the reactions of the various parties concerned.

Part II summarizes the views expressed in the coordination group concerning the overall approach. The Group was convened on three occasions by the Commission. Its deliberations clarified the objectives to be pursued, the working method to be adopted and the operational consequences to be expected from this continuing work, taking account of that already under way.

Lastly, Part III summarizes the initial assessment of the possible applications in the four fields concerned. The importance of these four fields in the functioning of an internal market can be better represented if they are likened to the essential components of a developing organism: blood circulatory system (transport infrastructures), nervous system (telecommunications infrastructures), a muscular system (energy infrastructures) and cerebral system (education and training infrastructures).

1. ACHIEVEMENTS IN THE FIRST HALF OF 1990

1.1 Task given to the Commission

(a) Conclusions of the Presidency of the European Council, 9 December 1989

Following the discussions at ministerial level in the second half of 1989, the European Council showed the importance it attached to infrastructure networks of European significance by putting further discussions on the following basis:

"Special priority should be given to the development and interconnection of trans-European networks, notably in the area of air traffic control, the linking of the main Community conurbations by broad-band telecommunications networks, the most efficient surface communications links and energy distribution. The European Council asks the Commission to propose the appropriate measures, taking into account the possibility of extending such action to the whole of the Community, paying particular attention to situations arising at the Community's limits in the context of economic and social cohesion."

Recalling these conclusions on 26 June 1990, the European Council in Dublin asked for "guidelines... to be agreed before the end of this year".

(b) Communication from the Commission to the Council (December 1989)

On 18 December 1989 the Commission adopted a communication to the Council entitled "Towards trans-European networks: objectives and possible applications"¹ setting out the reasons why it was necessary to examine whether infrastructures were adapted to the internal market. Four main fields were proposed for priority examination: transport, telecommunications, energy and training.

(c) Council resolution of 22 January 1990²

On the basis of the conclusions of the European Council and of the Commission's communication, the Council invited the Commission "to submit to it, before the end of 1990, a work programme and proposals for appropriate measures, taking into account the possibility of extending such action to the whole of the Community and without prejudice to the distribution of work among the various formations of the Council".

A progress report was to be drawn up in the first half of 1990.

The Commission was invited to convene, whenever necessary, a working party comprising the persons made responsible by each Member State for coordinating the work on the realization of trans-European networks. The Council also invited the Commission to initiate a wide-ranging consultation with the main economic operators concerned.

¹ COM(89) 643 final.

² OJ No C 27, 6.2.1990, p.8.

1.2 Activities carried out in the first half of 1990

(a) Inventory of requirements in the priority infrastructure fields

For each of the fields referred to by the Council, the Commission, on the basis of its own information, drew up an inventory of infrastructure requirements for the proper functioning of the internal market. These requirements were compared with measures already taken or in the process of being adopted. Based primarily, at this stage, on Commission information, this work has not yet been completed in all the fields concerned. A preliminary assessment of this comparison is given in Part III.

(b) Contributions from the Member States

The Commission invited the Member States to designate the persons responsible for coordinating discussions in a working party, which met on 5 March, 8 May and 28 May 1990. The Commission presented a working paper for each of the four fields selected, noted reactions and requested contributions from each delegation.

Several contributions have been received from the Member States, in particular Ireland, Portugal, Greece, the Netherlands and France, regarding general and sectoral requirements as perceived at national level and/or having a Community interest. Other delegations have said they will submit contributions.

The results of the working party's discussions on the objectives pursued are given in Part II; the advantages and limitations of the proposed global approach to trans-European networks are set out as clearly as possible.

(c) Initial contributions from the interests concerned

The Commission approached the industrial interests concerned, in their capacity either as producers or users of trans-European networks. Following the contribution received in November 1989 from the Round Table of Electronics Industrialists, the European Round Table submitted a memorandum on trans-European networks confirming the interest shown by major European firms in an overall approach to networks. The memorandum, which is general in scope, is to be followed by more specific contributions on "missing networks" and financing for large infrastructure projects. Other organizations, such as Unice and Eurochambres, have also shown great interest and intend to comment on the present report. In addition, the Commission is planning to circulate this report for comment by the interests concerned, on a sectoral basis, where these are not associated in some way with the work in progress.

2. POSSIBILITIES AFFORDED BY THE COMPREHENSIVE APPROACH TO TRANS-EUROPEAN NETWORKS

Before examining infrastructure requirements in the four priority fields selected, the Commission held more detailed discussions with the group of coordinators from the Member States on the problems common to all trans-European infrastructure networks and what a Community approach should involve. In this way it is possible to determine more clearly the substance, limitations and expected consequences of the approach, and the working method to be adopted.

2.1 Substance of the approach

- (a) Completing the internal market requires the expansion of infrastructure networks, which in turn means that the principle of subsidiarity must be actively applied at Community level.

The benefits of completing the internal market will materialize only if the process is underpinned by an adequate infrastructure network. This has four implications:

- the predicted (and already observed) increase in intra-Community trade unimpeded by physical and technical barriers (volume effect);
- the need for existing infrastructures to be interconnected so that they will match the new dimensions of the market (interoperability);
- the importance of taking the Community dimension into account in the design and implementation of future infrastructure systems.
- the need for an adequate level of services for the whole European area.

Whereas, in most cases, networks have expanded to-date regionally and nationally, they must now become increasingly integrated in operational terms in a wider context, i.e. the Community and, beyond that, the continent of Europe. To ensure that such integration is successful, each decision-making level must take the other levels into consideration where projects so require. There is, therefore, a growing need for consultation between the persons who decide the various national policies. The growing internationalization of financing for infrastructure projects already demonstrates the effect that this change of dimension is having.

- (b) The approach at Community level must focus on clearly identified measures

It is clear from discussions with the Member States and interests concerned that the overall approach at Community level will be beneficial if it focuses on the following:

- assistance in determining the Community significance of existing or new projects;
- inclusion of the significance of projects for the whole Community market in the analysis of project profitability;
- taking fuller account of the necessary balance between the centre and the periphery of the Community, in the context of economic and social cohesion;
- maximize the economic impact of the networks for the regions crossed;
- facilitating the expansion of opportunities for Community networks on a continental scale, in particular with the EFTA countries and Eastern Europe;
- promoting new synergies between regions in different States and between different branches of industry;
- encouraging the production of indicative plans in the context of a medium- to long-term strategy for expanding networks and optimizing of the use of the European area (cfr strategic paper 2000);
- encouraging joint submission of multinational projects;
- assistance in deciding Community financing for network projects.

2.2 Working method

- (a) The initial stage of the work confirms the value of coordination in Community bodies and are also within national administrations

In the first half of the year, the Member States got down to drawing up an inventory of their own requirements as regards networks, with an eye to completion of the internal market. This work must be stepped up in the second half of the year. It should result in a clear picture, for each Member State, of the infrastructure requirements perceived as necessary for the proper functioning of the internal market.

The various Commission departments responsible for the fields concerned have prepared an initial inventory of requirements and of current and scheduled initiatives and have set these out in working papers for the attention of the Member States. The ideas thus expressed by the Commission in the meetings of the coordination group have made it possible to identify requirements more clearly and to indicate how far present and future initiatives may meet them.

This twofold exercise confirms the value of an informal procedure for increasing awareness at Community level, designed to ensure that internal market requirements are adequately taken into account by the political bodies responsible for the fields concerned: transport, telecommunications, energy and training. At the same time, it has become necessary, within each Member State, to reinforce the same procedure so as to ensure better, more effective dissemination of internal market requirements among the specialist ministries.

(b) Coordination must not supersede the design of specific projects

The coordination effort applied in order to determine requirements with regard to trans-European networks must not result in the preparation of specific projects. It must help the parties involved in projects, where necessary and if this is not already being done, to incorporate the Community dimension in network design. The Community dimension largely involves interconnection, the interoperability of national networks and the emergence of trans-European services.

(c) The economic interests concerned must be fully involved in the overall approach

Given the major significance for the whole of the economy of the four fields examined, the interests concerned will be consulted by the competent departments in the Commission whenever necessary, taking account of on the basis of the coordination effort carried out under the trans-European networks initiative.

In particular, users of existing and future networks must be able to contribute in good time to the current discussions.

The present report will provide an initial basis for consulting the interests concerned. The Commission, on the initiative of the competent Directorates-General, intends, in those fields where in-depth consultation has not yet taken place, to hold hearings for the interests directly concerned (users, equipment manufacturers, network operators) by certain categories of project (e.g. electricity and gas transmission infrastructures).

- (d) The work programme to be drawn up by the end of 1990 must be an operational synthesis of the coordination effort to date

The work programme, which the Commission intends to present at the end of the year, will be the result of the coordination effort undertaken at national and Community level in order to identify relevant projects whose implementation for the internal market requires substantial political support. The work programme will therefore have to reflect the contributions of all parties concerned: users, project designers, public authorities, suppliers, network owners and financiers.

2.3 Operational consequences to be expected from the work programme

The work programme to be drawn up by the end of the year should provide an operational framework for activities in the various fields selected. It will take account primarily of current and future initiatives. Emphasis will be placed on initiatives where political support seems inadequate and there is insufficient awareness of their urgency. As regards the choice of specific priority projects, the Commission will have preliminary consultations at an appropriate political level with the authorities of the Member States concerned.

It will be necessary therefore:

- to indicate those trans-European infrastructure and service networks which are of prime importance for the functioning of the internal market, specifying how far work has progressed, their technical feasibility, the timetable for implementation and the means of financing;
- to analyse the political, legal, technical and administrative obstacles to implementation of these networks and, where necessary, to formulate proposals for overcoming them;
- to provide appropriate guidelines concerning network requirements so as to assist the preparation of specific projects;
- to stimulate private and public (or mixed), regional, national or transnational initiatives;
- to speed up the technical standardization required by the interoperability and integration of networks;
- to make possible the optimum use of Community resources available for financing infrastructure projects (structural Funds, special budget headings, EIB, etc.).

3. INITIAL ASSESSMENT OF THE PRIORITY AREAS

3.1 TRANSPORT

The elimination of all obstacles to the movement of goods, services and persons will provide an important stimulus to trade within the Community and generate increased demand for all means of transport. The resulting increase in traffic raises the question of whether existing infrastructures (including those under construction) are adequate.

The answer to this question requires that the following also be taken into consideration:

- the increased importance of logistics for the competitiveness of firms;
- efforts to make the best possible use at Community level of existing infrastructures through the interconnection of national networks;
- the environmental dimension of the construction and expansion of existing infrastructures
- a high level of safety;
- the financial resources available for building new infrastructures, and the allocation of priorities;
- the peripheral/central position of the Member States.

The analyses made, in particular in the coordination group, show that the problems vary according to the means of transport in question. Nevertheless, the impact of the internal market must be examined taking all modes of transport into consideration simultaneously. A multimodal approach is becoming increasingly necessary - whence the attraction of international combined transport; the latter requires the development of infrastructures that can cater for different modes and the mutually consistent technical harmonization of each mode.

The Community approach with regard to transport infrastructures is proving particularly useful and appropriate from the following two points of view:

- the preparation of network master plans, modelled on the work currently being done for high-speed rail transport;

- financial support for major infrastructures of Community significance, an essential instrument for the preparation of a common policy. On this subject the Commission is proposing that a multiannual Regulation for the period 1990-92 be adopted, to cover six projects deemed to be of Community significance and deserving priority as regards the internal market (High speed train network, Brenner link, Somport, road links to Ireland, Scandinavian link, reinforcement of terrestrial links in Greece)

3.1.1 Air transport

(a) Impact of the internal market

The liberalization of air transport and the introduction of rules that foster competition are bringing down air transport costs and making this mode of transport more attractive. In addition, people want greater mobility both within and outside the Community, while air freight is expanding significantly. The annual increase in air traffic is put at about 10%.

(b) Problems to be tackled

Two problems have been identified:

* Airspace congestion and air traffic control

The proportion of flights delayed by over 15 minutes is increasing, an indication that European air traffic management systems are reaching saturation point at peak periods. This problem was the object of a detailed analysis by the Commission in its Communication of 16 January 1989⁽³⁾ on the capacity of air traffic management systems, as well as various publications of user groups and consumer associations. The causes of the problem are well-known: the increasing number of competent national authorities (each operating according to its own rules) and the existence of 42 control centres operating with 22 generally incompatible systems.

* Airport infrastructures

The lack of modern airport infrastructures is a handicap for some Member States, generally those which are furthest from the centre of the Community. The saturation of several airports in the centre of the Community is giving rise to safety problems and making it necessary to establish new infrastructures or expand existing regional airports. The development of the fifth freedom is likely to lead to changes in the relative importance of existing international airports. Airports are managed by both private enterprises and public authorities, and airports are in competition with each other.

(3) Com(88)577

(c) The solutions adopted and their assessment

* Air traffic control

In the abovementioned Communication of 16 January 1989, the Commission proposed the adoption of a series of measures (adhesion of all Member States to Eurocontrol, the creation of a unique centre for the management of air traffic, the unification of control systems, harmonization of equipment, redistribution of civil and military airspace, etc..).

The adhesion to Eurocontrol of Member States still not members of the organisation is in progress. A unique centre for the management of air traffic has been set up by Eurocontrol: it will be operational by the end of 1994. The other measures still have to be adopted.

On 24 April 1990 the transport ministers, meeting within the European Civil Aviation Conference (ECAC), approved a plan designed to harmonize and gradually integrate air traffic control (ATC) systems over the period leading up to the year 2000, during which the problems are liable to worsen. Eurocontrol was made responsible for administering the plan.

The national civil aviation authorities regard it as the only realistic plan; the main users of the system, namely the airlines, consider that the measures are not likely to solve the problems quickly enough.

The Commission itself has stated its support for the ECAC'S programme, but considers it as a preliminary stage to the extent that it is limited to making the existing national systems compatible. Such efforts must be pursued in view of the objective of a single European system.

Information technologies and telecommunications industrialists consider that R&D work on data transmission between air traffic control centres computers, development and testing of new software and the study of an integrated ATC European system could all contribute to finding solutions to the difficulties encountered in the sector.

* Airport infrastructures

There is at present no forum for consultation at Community level in this area, since the Commission's proposal to broaden the remit of the Transport Infrastructure Committee to cover port and airport infrastructures was rejected by the Council.

Among the Member States, opinions are divided as to the need for such consultation; the Commission for its part considers that it is justified by the advantage to the Community of developing such infrastructures.

3.1.2 Road transport

(a) Impact of the internal market

Although liberalization of the sector is likely to allow more efficient use of existing transport capacities and therefore of the network (fewer lorries will travel empty), this mode of transport, which accounts for over half the total volume of goods carried in Europe, can be expected to enjoy steady growth.

Road is the mode of transport that has expanded most over the last 20 years, on account of its flexibility, without at the same time enjoying a level of investment enabling that growth to be absorbed (investment has grown by less than 1% a year, as against traffic growth of over 2% a year).

Motorway traffic has grown considerably since 1986, exceeding 5% in the case of passenger and heavy goods vehicles on major arteries. International goods haulage is growing faster still; it is also a means of improving access to the outlying regions. It can be expected that the abolition of frontier checks will make the missing links even more visible and therefore more unacceptable.

(b) Problems to be tackled

Five specific problems are emerging:

- greater sensitivity to the missing links in major international routes;
- the proliferation of bottlenecks;
- congestion in large urban centres, causing much time-wasting and aggravating air pollution considerably;
- the insufficiency or inadequacy of basic infrastructures in certain outlying countries;
- the lack of attention devoted in road design to operation of the road and motorway network and the under-utilization of the overall network capacity in the event of congestion and/or incidents.

(c) The solutions and their assessment

Several Member States have embarked on major motorway infrastructure programmes. The advantage of such programmes is that they can be developed in a coordinated fashion in order to ensure that they complement each other and therefore prove economically cost-effective.

Apart from projects that are already under way, such as Eurotunnel and Scanlink, solutions are being sought in the following areas:

- improving land-sea access limits
- integrating outlying regions into the Community network;
- crossing the Alps (discussions on transit through Switzerland and Austria) and the Pyrenees (Somport, Puymorens);
- combining road transport with rail and inland waterways (see below);
- applying electronic data transmission techniques to improve traffic management, reduce pollution and enhance road safety (see the reference to IRIS below).

A tentative network of roads of Community interest has been drawn up by the Transport Infrastructure Committee and is regularly updated. It should enable priorities to be identified more precisely and Community financial support (under the ERDF, etc.) to be channelled in the right direction.

It would be desirable for there to be a more comprehensive approach to road infrastructure of Community interest, similar to that which is evolving for rail transport.

3.1.3 Rail transport

The Commission recently sent the Council a communication on a Community railway policy⁴ which took account of the requirements of the completion of the internal market and was accompanied by specific proposals.

(a) Passenger traffic

(i) Impact of the internal market

International passenger rail traffic accounts for only 0.5% of total passenger rail traffic and has been steadily declining since 1975, the ratio of rail to air having slumped from 50:50 to 38:62. Greater individual mobility and the worsening difficulties facing road and air transport are likely to boost rail traffic.

(ii) Problems to be tackled

Existing networks give rise to compatibility and interoperability problems deriving from differences in technical standards: track gauge in the Iberian peninsula, electrical voltage and signalling. Future networks must be based on common designs that satisfy cost-effectiveness criteria. It is also essential that rail networks are themselves well served by rapid, efficient urban transport systems.

4 OCM(89) 564 final.

(iii) Solutions

The Community's priorities are currently focused on the high-speed train, which offers an alternative to road and air transport, particularly in densely populated regions.

In December 1989 the Council instructed a high-level working party to draw up, by 31 December 1990, an overall plan identifying the projects that should be undertaken as a matter of priority with a view to establishing a European high-speed rail network, on the basis of national plans and decisions already taken at international level.

The working party, in which all the circles concerned are represented, is examining network aspects, equipment standardization problems and infrastructure compatibility issues. The outcome of its discussions could be incorporated in the work programme that is expected to be ready by the end of the year.

Work undertaken in the traditional rail transport sector has been limited, but some of the standards adopted for high-speed trains will apply. The Spanish Government's plan to adjust track gauge is undoubtedly one of the most urgent issues at the present time.

(b) Goods traffic

(i) Impact of the internal market

In 1987, rail accounted for no more than 10% of all goods traffic (as against 14% in 1975). Keener competition resulting from completion of the internal market should face the railways more squarely with the need to offer services more precisely tailored to the needs of users and priced at levels that compete with other modes of transport. Increasing sensitivity to environmental issues and the demand of the countries through which goods pass in transit towards Italy and Greece (Austria, Switzerland and Yugoslavia) nevertheless provide rail with fresh opportunities. Combined transport could be advantantageously developed (see below).

(ii) Problems to be tackled

Apart from structural and financial difficulties, the most important problem appears to be the disparities between the technical standards governing the different rail networks and between rail and road transport standards.

(iii) Solutions and their assessment

Apart from proposals concerning the structure of the railways and the way in which they operate, only the development of combined transport appears today capable of increasing rail's share of goods transport.

3.1.4 Inland waterways

(a) Impact of the internal market

This mode of transport will benefit from the growth in goods traffic if it succeeds in providing the flexible and efficient services that users expect. It does offer great environmental advantages and considerable opportunities for extending the benefit of the internal market to eastern Europe.

(b) Problems to be tackled

After enjoying similar development to that of rail transport, inland waterway transport is undergoing restructuring, particularly on the supply side.

As far as infrastructures are concerned, apart from the backbone constituted by the Rhine, there is a coherent network of navigable waterways for units with a load capacity of between 1 350 and 10 000 tonnes, covering the Federal Republic of Germany, the Netherlands, Belgium, Luxembourg and the frontier regions of northern and eastern France. France has an inland waterway network, but the waterways are not satisfactorily linked to the main European network. The network of Community interest, concentrated in five Community countries, is linked to the main ports in northern Europe and will be joined to the Danube in 1991.

(c) Solutions and their assessment

In the Commission's view, the existing network is of great value, particularly with a view to closer relations with eastern Europe. Improvements should be made above all in France and Germany. Development of container transport infrastructures is also highly desirable, with a view to taking advantage of the considerable growth prospects for combined transport. The Commission deplores the fact that the Member States concerned are displaying little appetite for Community action in the area.

3.1.5 Port infrastructures

(a) Impact of the internal market

Shipping accounts for 30% of intra-Community trade and 90% of the Community's external trade. For certain outlying Member States, sea transport is furthermore the most economic way of gaining access to the centre of the Community. It will therefore benefit from the growth generated by the internal market, and with that in mind, consideration should be given to ports which provide the main links between Member States that are separated by the sea and also other ports that can contribute to the development of cabotage and short maritime links which complement overland transport.

(b) Problems to be tackled

Although the development of port infrastructures clearly contributes to the smooth functioning of the internal market, attempts by the Community to take account of such infrastructures run into difficulties created by the major differences between Member States in the running of ports, the allocation of responsibilities for port activities between the public and private sectors and financial structures.

(c) Solutions

The first step involves drawing up a list of ports of Community interest.

As in the case of airport infrastructures, consultation at Community level on port infrastructures has been prevented by the opposition of several Member States.

3.1.6 International combined transport

(a) Impact of the internal market

With 4% of goods traffic in the Community, international combined transport is enjoying considerable growth (24% in 1988), which will undoubtedly continue in view of the response it offers to the problems of crossing the Alps and road congestion. It can thus provide a solution to the ecological concerns increasingly being voiced. It is generally considered likely that the volume of goods carried in this manner will treble by the year 2005.

(b) Problems to be tackled

The major stumbling-block to the development of this means of transport is the absence of a genuine European network. If such a network is to be established, urgent action needs to be taken to overcome the diversity of standards, gauges, equipment and organizational patterns.

(c) Solutions and their assessment

The Member States unanimously agree that this mode of transport should be developed as a matter of urgency.

The Commission has tabled a proposal for a Directive (COM(89) 564 final) aimed at:

- (i) liberalizing initial and terminal road journeys completely;
- (ii) increasing tax incentives; and
- (iii) clarifying the legal position of own-account transporters in combined transport.

Furthermore, a study requested by the Commission and the parties concerned recently drew up a blueprint for an international network and the conditions under which it could be developed, and put forward investment recommendations. The study's findings are currently being examined by a working party, and the Commission will present suitable proposals to the Council before the end of the year. -

3.1.7 Application of electronic data transmission to transport

(a) Impact of the internal market

The impact of the internal market on road transport in general justifies looking for solutions that enable navigation, traffic information and road safety to be managed more effectively. This could result in more efficient use of transport capacities released through Community legislation, improved traffic flows, less wasted time and better road safety.

(b) Problems to be tackled

Congestion of the access roads to large cities and certain motorway sections delays road transport considerably and represents a significant loss for the European economy as a whole. The traffic information currently broadcast is not generally useful to long-distance drivers or road hauliers because there is no continuity between the information services in different regions.

Several electronic data transmission systems are being developed independently to tackle those problems, and there is a risk that they may prove incompatible.

(c) Solutions

The DRIVE R&D programme (1988-91) was used as a basis for developing the IRIS (Integrated Road Safety, Information and Navigation System) concept, which will provide solutions to the abovementioned problems. To that end, the following action must be taken so that the systems for which all the specifications are already available can be established immediately (the systems that become available at a later date will be tested under the new (1990-94) R&D framework programme in conjunction with the relevant Eureka projects):

- the introduction of strategies for integrated long-distance and urban traffic control;
- the establishment of links between traffic control and information centres in the different Member States;
- the creation of the necessary infrastructure for informing drivers, in their own language, of the traffic situation and road hazards ahead and guiding them effectively and safely to their destination;
- the introduction of a pan-European system for locating and communicating with vehicles to meet the needs of hauliers and fleet managers. This applies particularly to the carriage of dangerous substances and combined transport.

The circles concerned (public authorities, equipment and vehicle manufacturers and road haulage federations) are being closely associated with the work in progress. If less than 2% of the initial budget for road construction could be allocated to EDT systems, the use of the road infrastructure could be optimized.

3.2 TELECOMMUNICATIONS INFRASTRUCTURES AND ELECTRONIC DATA TRANSMISSION NETWORKS

(a) Impact of the internal market

Dismantling of the Community's internal frontiers and the accompanying extension of markets in goods and services to cover the entire territory of the Community will rapidly boost the demand for trans-European telecommunications services. The impact of the internal market on Europe's economy and competitiveness depends to a large extent on the smooth operation of its nervous system: electronic data transmission networks.

It is therefore essential that the capacity offered by infrastructures and services be upgraded in good time to cope with increasing demand. New services arising from advances in technology must also be gradually made available, on a Europe-wide basis, to both economic operators and public authorities, so that the former can improve their competitiveness and the latter are able to administer the single market.

The need to make the internal market a reality will generate a whole set of new requirements and face the Community with an inescapable obligation to take appropriate action. Electronic data transmission networks must be able to allow the necessary information to be exchanged between:

- the Community institutions and the national administrations;
- national administrations in different Member States and indeed within the same Member State;
- administrations and economic operators.

A few examples will suffice to demonstrate the importance of the new needs that are emerging and will have to be met:

- the abolition of controls on persons and goods at the Community's internal frontiers means that there will have to be a permanent, organized and rapid exchange of information on persons and goods entering the Community: customs formalities, animal and plant health checks, police and security checks on persons crossing external frontiers, and collection of statistics on intra-Community trade.

Those needs are illustrated in particular by the signature on 19 June 1990 of the Convention implementing the Schengen Agreement, which will involve electronic transmission of data between the law-enforcement agencies of the signatory countries via the Schengen Information System (SIS), and the request made by the Council (Agriculture) on 26 June 1990 that a computerized system be set up for the exchange of information between veterinary authorities in the Community for the purposes of implementing the Directive on veterinary and zootechnical checks in intra-Community trade in live animals;

- the abolition of tax formalities (VAT and excise duties) at the Community's internal frontiers makes it necessary to introduce a new information exchange system for effectively checking intra-Community transactions to ensure that tax is properly collected;
- prevention of technical barriers and administration of safeguard clauses written into technical harmonization directives call for increasingly extensive exchanges of information between the Commission and national administrations;
- the removal of barriers to geographical mobility is resulting in increased mobility, for some groups of workers at least, and the development of single employment areas in frontier regions. This calls for wider circulation of information on jobs and job-seekers, a process which has now begun through the European System for the International Clearing of Vacancies and Applications for Employment (SEDOC).

(b) Problems to be tackled

As part of its telecommunications policy, the Community has begun coordinating advanced telecommunications infrastructures (digital mobile communications and networks), but major gaps remain, particularly in trans-European applications.

The liberalization process currently under way in the telecommunications sector and the opening-up to competition of services that were previously under public monopoly are radically changing the structure of the industry and its relationships with the public authorities. It is no longer possible to force traditional telecommunications operators to carry out investments that are not commercially viable. It is therefore vitally important to devote the necessary attention to identifying needs as early as possible.

For the time being, intra-Community traffic is still very small in comparison with national traffic (it accounts for much less than one-tenth of total telecommunications traffic), and it is difficult to gain a clear picture of the size of the emerging European market. As a consequence, the supply of trans-Community electronic data transmission services has not developed beyond bilateral agreements limited to the strict minimum in terms of both capacity and quality.

The bilateral approach in turn gives rise to further difficulties when it comes to administering networks.

The structure of the national networks has a direct impact on the machinery for administering them, which governs in particular the relations between the operator and his customers (access to the network and to services, user identification, invoicing, etc.). The machinery in each Member State is different and generally incompatible with that of the other Member States, and these differences are overcome on an ad hoc piecemeal basis, through bilateral agreements, which faces suppliers of value-added services who are attempting to gain access to the European market with virtually insurmountable obstacles in terms of the technical complexity of the problems and the time needed to solve them.

In the present situation, the limited quality and quantity of trans-European networks and services available, compounded by the cumbersome and lack of uniformity of the administrative machinery, are holding back demand, since the expenditure that a user would have to incur in order to overcome such obstacles is often deemed to outweigh the advantages to be gained from access to the Community market.

(c) Solutions

Two complementary courses of action can help overcome this truly Community problem.

The first is to strengthen and diversify the Community's influence on supply.

The aim should be for the network operators to create trans-European electronic data transmission systems that are overlaid on and reliably interconnected with the existing national systems. Such overlay should offer "one-stop shopping", i.e. enable a service provider located anywhere in the Community to offer a value-added service to all his Community customers by dealing with a single network operator, instead of having to negotiate, as is the case at present, a separate agreement with each of the national operators in the countries he wishes to cover. International one-stop shopping should be able to offer suppliers of value-added services full network performance throughout the Community.

The traditional network operators could provide an initial solution to the problem if they undertook to ensure a technically, administratively and commercially satisfactory level of interoperability between the networks they are responsible for running. Nevertheless, if operators are to set up a harmonized superstructure, they will be faced, when establishing the conditions for their cooperation, with competition-related problems that will sometimes be difficult to overcome: an effort should be made to clarify the solutions that are compatible with Community law. An alternative response to the existing deficiencies would of course be for European services firms to set up such trans-European superstructures themselves.

The second and more important line of action is to support the creation of a market which will provide demand for transfrontier data interchange and generate trans-Community traffic. If it is to be credible, such action must be based on a real market whose existence and expansion is proven and not on optimistic but unsubstantiated forecasts.

The fact that all telecommunications network operators now have to run their businesses on a commercial basis naturally prompts them to assign priority to applications that generate sufficient income and are likely to provide a maximum return on investment. Such applications are chiefly of use to business users, whose trans-European communications requirements will be boosted by completion of the internal market.

Following the approval by the Council on 23 April 1990 of the third R&D framework programme, the Commission has proposed that a specific programme be launched on the development of electronic data transmission systems in the general interest.

The priority areas covered by that specific programme are directly associated with the optimum use of internal market infrastructures: support for the creation of trans-European networks linking administrations (in which priority is attached to customs, social security, frontier policing, indirect taxation and statistics), transport services, health care services and distance training services.

A budget of ECU 380 million has been allocated to the programme for the period 1990-94. The Commission has proposed that approximately one-third of those resources be specifically earmarked for the trial use of new, improved telecommunications procedures between the administrations and the corresponding internal-market applications.

The aim of the programme is to define the needs and technical problems, look for solutions to those problems and carry out pilot projects.

The general objective is therefore to foster the emergence of new needs, so that service providers - who should be encouraged as far as possible to take action - become aware at a sufficiently early stage of the advantage to be derived from satisfying those needs.

3.2.1 Electronic mail and electronic data interchange (EDI)

(a) Impact of the internal market

Electronic mail is the chief means of communication that will make it possible, when available under suitable conditions at European level, fairly rapidly to satisfy at least some of the needs of both public- and private-sector economic operators and the bodies responsible for administering the internal market.

Electronic mail is currently enjoying rapid growth. Market surveys point to an average growth in the user population (mail-boxes) of 180% a year, which means that annual growth in transfrontier traffic should increase fivefold every year until 1994.

The electronic mail service makes it possible to transmit both unstructured data (ordinary documents) and structured data via EDI (Electronic Data Interchange). The latter system, which requires the data to be structured on harmonized forms and therefore a very high degree of standardization (EDIFACT⁶ standards), is particularly important for trade, but also concerns the exchange of data between administrations.

(b) Problems to be tackled

The standardization of electronic mail is now sufficiently mature for European products to be marketed; the network infrastructures already in existence and scheduled to be brought into service towards the end of 1991 should be able to absorb the foreseeable transfrontier traffic generated by electronic mail service applications over the five years ahead. Nevertheless, the interconnection of national networks is still causing problems, particularly as far as user identification and transfrontier invoicing are concerned.

In the EDI field, action must be taken as a matter of urgency to evaluate needs and identify the national systems that will have to be interconnected to satisfy them. The main difficulties will reside in the choice of data and format for documents to be transmitted electronically and in the adoption of common technical interfaces for the users of a particular system.

(c) Solutions

The Commission is closely monitoring work by the public telecommunications operators on drawing up a memorandum of understanding which will establish a timetable for the coordinated introduction of trans-European electronic mail. The Commission has also taken the necessary steps to ensure that the European standards institutions complete, at the earliest opportunity, the outstanding technical specifications standardizing the electronic mail service.

Community action to promote expansion of the demand for electronic mail should be stepped up, in particular by stimulating market awareness and encouraging public bodies to purchase and use standardized products. In the latter area, the INSIS programme⁷ will lay special emphasis on defining the needs of the institutions concerned and developing pilot applications to prepare the ground for joint administration of the single market.

6 EDIFACT: Electronic Data Interchange for Administration, Commerce and Transport.

7 INSIS: Interinstitutional Integrated Information System.

The STAR programme⁸ will also have to be involved so that coverage of the entire Community territory can be completed while assisting the less-favoured regions. Measures to stimulate market awareness, and in particular to promote the electronic mail service in the Community's less-favoured regions, are included in the IMPACT programme.⁹

In the short term (1991-92), EDI will be able to develop only if users have at their disposal a European electronic mail service operating as a one-stop shop (single subscription, single invoice, etc.). In order to

3.2.2 Videotex

(a) Impact of the internal market

European videotex has developed satisfactorily, since some 6 million terminals are currently in use in the Community (of which 5.2 million are in France), making Europe the world leader in the field. The development of videotex traffic in France (7 000 applications offered to users) and surveys carried out on transfrontier traffic in certain countries (20% of connections made on the Belgian business videotex network are international) reveal considerable potential for pan-European development, which is currently held back by a number of problems. If properly introduced at European level, this type of service can bring great benefits to individuals, businesses and administrations.

(b) Problems to be tackled

Transfrontier videotex applications have to contend with two types of difficulty: the co-existence of three different, incompatible technical standards and the disparities between national administrative standards, making them incompatible too. The lack of precise information on the nature and size of the transfrontier market is a further factor that goes to explain why the Community is currently adopting a "wait-and-see" attitude.

(c) Solutions

Since the widespread adoption of different standards makes it too late to agree on a common one, the solution would be to overlay a European system that would link up the different videotex systems and thus overcome the technical and administrative disparities between them.

⁸ STAR: Special Telecommunications Action for Regional development.

⁹ IMPACT: Information Market Policy Actions.

It will also be necessary to focus on demand in order to identify applications that justify trans-Community investment by their nature: the European electronic directory and tourism could give rise to such applications. The validity of this approach should first be confirmed by market surveys.

3.2.3 Mobile radiocommunications

(a) Impact of the internal market

The reduction in the cost of equipment stemming from technological developments and the liberalization of services is already leading to an explosion in demand for mobile radiocommunications in all its forms (cellular radio telephony, paging, cordless telephones, etc.). The abolition of frontiers will increase personal mobility and boost demand for continuity of services throughout the Community.

(b) Problems to be tackled

The current situation is unsatisfactory: firstly, national systems are saturated with the result that expansion of the market is being held back and even halted in some countries; secondly, the incompatibility of the technical choices made in the Member States means that the user must purchase as many different terminals as he wishes to use national services. Furthermore, because of the very pressure of demand, some countries may be tempted to introduce services before European standardization has sufficiently progressed, thereby inducing further technical fragmentation at Community level.

(c) Solutions

These consist first and foremost of establishing as soon as possible a Community strategy for introducing the various mobile systems in the Community and for promoting the definition of appropriate standards; this should be accompanied by the adoption of a legislative framework for the introduction of these systems.

Work is well underway in this area: the Community has adopted a number of recommendations for the coordinated introduction of the next generation of services (radio telephony, paging, cordless telephones) and Directives reserving common radio frequency bands for such services. The public operators have, for their part, signed protocols committing them to create harmonized pan-European systems.

The new systems will gradually replace the current ones from 1991 onwards between the major urban centres. However, it will be necessary to keep a close eye on the very rapid developments in this field in order to anticipate situations which could further fragment the market.

3.2.4 The supply of ISDN services

The general implementation of the Integrated Services Digital Network (ISDN) will lead to a gradual migration of the services currently provided through other data-transmission media. Furthermore, this infrastructure will permit new types of services to be supplied, the two main categories of which will be EDT access to photographic-quality image databases and the videophone.

Despite the protocol signed by the main European public operators, there has been some delay in developing the pan-European ISDN, partly because of the slowness of the standardization process at world level (CCITT). On 18 June 1990 the Commission transmitted to the Council a report describing the situation and proposing a number of corrective measures.

The Commission expects the Council to adopt, in January 1992, within the framework of the ONP, a recommendation concerning the ISDN technical interfaces and the tariff principles which could be applied by public operators. At the same time, the Commission has set up a European ISDN User Forum to reinforce demand and step up pressure on operators.

(a) Impact of the internal market

The possibility of transmitting photographic-quality images electronically at a speed and price acceptable to the user opens up a totally new area for creators of applications. However, certain applications in both the business and private fields are already clearly in demand; they are already emerging in those Member States where a commercial ISDN has been established.

On the other hand, although videophone technology is developing rapidly and limited batches of equipment have been produced by European industry, there is still some uncertainty as to the speed of development of this new service, which would seem, by its very nature, to have a trans-European application.

(b) Problems to be tackled

As indicated above, the major problem is clearly the availability of a satisfactory pan-European infrastructure and reliable indications as to the future market.

(c) Solutions

Work on standardization is underway at the European Telecommunications Standards Institute (ETSI). On the supply front, it is essential that national operators should not take measures which anticipate future standardization and which may thereby impede European harmonization. Furthermore, as soon as the transfrontier ISDN infrastructure is in place, it will be necessary to launch a number of pilot projects to analyse and quantify business and residential markets.

3.2.5 Broadband telecommunications services

These currently emerging services can be broadly classified into those which employ a high-definition animated picture and those which involve rapid data transmission. It is probable, however, that this practical classification will soon disappear and that future broadband services will vary in the course of a communication, i.e. they will consist, at different moments, of voice, data and images. These ideas for multi-media services and their consequences in the telecommunications field are currently being studied under the Community's RACE research programme. However, demand for less developed services already exists today.

(a) Impact of the internal market

The explosion of the market in high-speed and high-volume data transmission occurred first in the United States and then in Europe. Demand for broadband highways increased by 45% in 1989 and by as much as 100% at the top of the range. This demand is coming from research centres and major business users.

It is increasingly taking shape in Europe, and one of its features is that it is transnational. It involves the same type of users as in the United States. It should also be noted that, among this type of user, high-speed data transmission is frequently accompanied by the need for high-definition business images. Completion of the internal market will provide a powerful stimulus for this type of service.

A further aspect concerns services supplied to the public. At present, television and telecommunications are technically separate: in future, there will probably be a gradual integration of the two fields - a process which will have to take account of the internal market dimension.

(b) Problems to be tackled

These are linked to the fact that there is no satisfactory European infrastructure. The collection of national networks at very different stages of development, the variation in legislation from one Member State to another and, in particular, the lack of a "one-stop shop" are severely impeding the emergence of advanced trans-European telecommunications services. It should be noted, however, that suppliers with non-Community financial origins are already offering networks made up of leased lines.

(c) Solutions

The approach already adopted by the Commission should be continued, namely to promote cooperation between European operators so as to achieve truly trans-European advanced telecommunications and to enable users to implement research findings as quickly as possible by setting up full-scale experiments at the pre-competitive stage. Furthermore, as these are generally long-term developments, solutions must continually be adapted to changing circumstances.

3.3 ENERGY-TRANSMISSION NETWORKS

(a) Impact of the single market

If the objective of a single energy market is to reduce costs for the final consumer and industry by improving its competitiveness, this objective cannot be reached without an optimum allocation of energy resources and therefore without research into the optimisation of infrastructures and networks. Energy transmission networks are in fact indispensable for the implementation of rights such as the transit of natural gas and electricity and the provision of conditions of third party access to the networks.

These objectives can be achieved only if the market has a Community-wide energy infrastructure.

Investment planning, on a national level, although accompanied by some international cooperation, has so far failed to exploit fully the advantages of operating on a Community scale. Improving the integration of electricity and gas supply infrastructures thus seems to be an essential element, enabling, in the long term, the strengthening of economic and social cohesion in the Community.

In this regard, a primary Community response has been brought concerning the development and strengthening of networks in regions eligible for structural funds. The REGEN initiative should allow, between now and 1993, the participation of ERDF in the financing of projects essential for the achievement of energy objectives of the Community and member States.

A special effort is now being made in the field of harmonisation of standards and technical specifications in order to effectively promote and strengthen energy exchanges. Propositions will be presented in this regard at the beginning of 1991. They should promote the methods of management and control of networks which are proving all the more necessary in view of the strengthening of connections with Eastern Europe.

(b) Electricity interconnections

(i) The situation at present

Originally based on regional grids, the interconnected grids were progressively developed to reduce the risks of electricity transmission, permitting prompt mutual assistance. They have however enabled commercial swaps, generally of a short-and medium-term nature, to be carried out, which, despite having doubled in the last 15 years, are still limited in number.

The Member States are for the most part interconnected with two integrated systems - UCPTÉ and NORDEL - involving a number of European non-member countries. Currently, the Republic of Ireland has no international connection with its network while Greece is only connected locally to its European neighbours.

The development of interconnections on a European scale and, consequently, the intensification of electricity exchanges which it enables, naturally favours a more flexible management of the capacity of the Member States networks and an increased rationalisation of investments in production infrastructures.

However, preliminary studies on setting up and reinforcing the networks identify from the outset the obstacles causing the delays and the blockages which are threatening the realisation of such projects, e.g. the need to enforce environmental protection can impose constraints leading, in certain cases, to the withdrawal of projects or alternative solutions whose financial viability is debatable. The same applies to the variety of legalities and authorisation procedures to which large interconnection projects are subjected.

Moreover, a number of technical problems will have to be overcome as networks are linked up with those of Eastern Europe whose electricity transmission systems meet different standards. Transmission over very long distances presents technical difficulties of a different nature due to the significance of loss of power and increasing fragility of the lines. Technical progress on high voltage transmission or on use of supra conductors are still vital for strengthening links over long distances, notably with Eastern Europe or the mediterranean basin.

(ii) The solutions under consideration

It is expected that the interconnection projects which are currently being discussed by Ireland and the United Kingdom and by Greece and Italy will rapidly be implemented with a view to the effective participation of those countries in the single market for energy.

Other projects now being implemented or scrutinized are expected to provide further possibilities of interconnection between Member States and neighbouring non-member countries, viz.:

- upgrading the 400 kV lines between France, Spain and Portugal in order to facilitate the transmission of electricity to Portugal from 1994 onwards;
- doubling of the cross-Channel link between France and the United Kingdom;
- linking Spain with Morocco on the one hand, and Italy with Tunisia on the other.

Projects for which problems of incompatibility of standards and techniques must be overcome, are also under consideration with a view to increasing the number of links with East European countries, so that East Germany can be included in the UCPTE network and (AC/DC) conversion stations can be installed between Austria and Hungary, and between Greece and Bulgaria. On a quantitative level, an increase of efficiency in the global electricity system could be achieved by an improvement in coordination techniques in the use of networks and the development of technical information exchange between operators.

Moreover, a comprehensive study must be made of the need for harmonisation and simplification of applicable rules and procedures in the Member States in the realisation of network infrastructure projects, in order to reduce costs currently being incurred and to overcome the constraints relating to environmental protection.

(c) Gas interconnections

(i) The situation at present

The situation as regards natural gas networks differs greatly from that of electricity in so far as it responds to the need to link the fields to consumption areas. The member State producers who now fulfil two thirds of gas requirements in the Community developed early on a national network, also geared towards export. These networks can frequently convey natural gas from Community fields, as well as from third countries. In the other cases, transmission and distribution networks are developed from port facilities for incoming liquefied natural gas (LNG). It is also true that the European gas network is in disequilibrium, even semi-inexistent in the south of the Community, with the exception still of Italy, whose choices in energy can be seen in their search for gas links, notably with North Africa.

(ii) The solutions under consideration

- * In this general context, two Member States Greece and Portugal are not yet supplied with natural gas; major projects for the setting up of a national network are being studied or are now being set up.
- * Three other Member States Spain, Ireland and the United Kingdom are not yet linked up to the rest of the European network. An interconnection is now underway between Spain and France (Pamplona-Laocq) which, from 1993, will enable the supply of Norwegian gas to Spain and, more long-term, to Portugal. An interconnection project between Ireland and the United Kingdom is currently under consideration. The link between the United Kingdom and the continent, whose absence is seen as an obvious missing link in the European network, is not envisaged in the short term.
- * The "Zeepipe" pipeline to Zeebrugge (Belgium) will open up a second supply line for conveying Norwegian natural gas to several Member States.
- * In Spain, plans for an internal link between Madrid and Seville could, after 1995, lead to a link with Morocco and thus enabling the opening of a second access point to Algerian natural gas. The project will make it possible to install several new links between Spain and Portugal and Spain and France (Catalonia-Midi Pyrénées).
- * The upgrading of the underwater gas pipeline between Tunisia and Italy should be in operation by 1993. Its realisation will increase the supply of Algerian gas in Italy and open up access to new potential markets in Europe.

Executing those projects (the Commission has already proposed that some of them should receive financial support from the structural Funds-REGEN initiative) will ensure greater reliability and security of supply by raising those concepts from a national to a Community level; the Community will strengthen, by its new gas links, the current balance of its foreign supply by its three main suppliers (Norway, the Soviet Union and Algeria).

Other interconnection projects involving northern Member States should be looked at in detail. They would involve strengthening the existing links between the gas-supply networks of Belgium and the Federal Republic of Germany; the Netherlands (Groningen) and the Federal Republic of Germany (Emden) and, at a later stage, the GDR; and Denmark and Norway.

Moreover, although the problem is less serious in the gas sector than in the electricity sector, a comprehensive study must also be made of the harmonisation and simplification of rules and procedures concerning gas pipes, especially to overcome the constraints of the environment.

3.4 TRAINING NETWORKS

(a) The impact of the single market

In the run-up to the completion of the single market, there are increasing signs that qualifications are taking on a "European dimension". The European labour market will be one of skilled human resources. It must, throughout Europe, give enterprises free access to the skills that are available.

A European labour market is being created which will generate a new training and skills area for European citizens and enterprises. New requirements in terms of skills and qualifications will emerge, both for those who are able to move in and among labour markets and those who are not.

Creating the sort of European skills market which enterprises need in order to make the best possible use of their human resources and thus increase their competitiveness requires that links and networks be established which can ensure the necessary transparency and correlation between qualifications and training.

The completion of the single market entails fundamental changes in the skills profiles sought by enterprises.

This new labour market will be based on increased mobility on the part of teaching staff, research workers and students. This mobility will more often than not occur in the context of permanent partnerships between enterprises and training institutes in different Member States.

Since the setting up of telematic networks makes it possible to link up institutes and thereby ensure optimum use of training resources it will allow widespread access to training facilities.

(b) Projects which need to be consolidated

The Community training programmes such as COMETT, ERASMUS, PETRA, LINGUA, EUROTECNET, FORCE, TEMPUS attempt to promote innovation transfers and exchanges between training operators, and to develop transnational cooperation. They also represent an adequate prolongation of the continued action by research and development programmes initiated by the Commission departments.

To this end, the above programmes rely on the operation of communication networks between operators and businesses - networks which allow more permanent relations to be established. These networks can be developed to increase the efficiency of interventions, to increase their impact on a greater number of bodies and to transfer major innovations more directly.

An optimum level of coordination must also be found between the various networks set up by the abovementioned programmes.

In the field of training for research via research, the Science programme has, in its first two years alone, awarded upwards of 700 grants to young scientists wishing to undertake further training in another Member State in the exact sciences and in fields covered by the various Community programmes on R&TD. In the context of the third framework programme of Community R&TD measures (1990-94), which was adopted by the Council on 23 April 1990, the Commission has recently proposed that a special new programme be launched in the field of human resources and mobility, designed to help train 5 000 young research workers over a five-year period, in particular in the context of setting-up or strengthening the links between scientific and technical centres of excellence in the various Member States.

The Delta programme has highlighted a sharp increase in training facilities; that growth should be encouraged and amplified in order to establish networks which will exploit the latest technology and provide advanced training.

(c) The benefits expected from trans-European networks

The setting-up of trans-European networks in the field of vocational training may have five complementary targets:

(i) systematic connection to databases (Eurydice, Cedefop, etc.), providing direct access to information on the identification of operators and training courses in Europe and their extension to the various users; an electronic "clearing house" for training grants in the field of research which matches both supply (the centres of excellence) and demand (young research workers);

(ii) the establishment of interactive conversational systems between training operators (e.g. the Comett programme UETP), which can contribute to the exchange of information and methods with a view to improving the quality of training;

(iii) the dissemination of training courses and programmes which are suitable for a wider or a specific public, in particular SMEs (e.g. the European network of open universities, which is designed to encourage distance learning);

(iv) the setting up of flexible and distance-learning training services based on advanced technology, which will make it possible to analyse the results of the research carried out under the Delta programme and to follow them up in the context of the "General telematic services - Distance education" Framework Programme;

(v) in an even more ambitious context, the setting up of a European television network for training, as envisaged by the European Round Table, would be a further quantum leap.

In this context, the Community could help to bring together the various public and private bodies and users interested in a greater use of television on a European level, notably to highlight what is already in progress.

4. WORK SCHEDULE

It is expected that the following will be carried out in the second half of the year with a view to drawing up a work schedule:

1. dissemination this progress report among interested parties;
2. full inventory of the financial resources available throughout the Community for funding trans-European networks;
3. consideration of the possibilities of private funding and, in particular, the interest and benefits attached to a "declaration of European interest" to facilitate such funding.
4. further scrutiny of projects which are of Community interest, taking into account initiatives which are being implemented or planned and indication of the following in respect of each of those projects:
 - their contribution to the operation of the single market (including their economic and social relevance);
 - their technical feasibility;
 - their financial feasibility;
 - their environmental aspects;
 - the time required for their completion.

The list thus produced would then be included in the work schedule presented by the Commission at the end of the year.