

TRANSPORT INFRASTRUCTURE PLANNING IN THE EEC

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SYNOPSIS

Integrated planning for transport infrastructure is a widely recognised need for developing countries. The European Economic Community (EEC), being composed of ten countries whose economies are relatively strong in world terms, might not at first sight seem a candidate for similar planning needs. This paper describes some of the policies and other activities of the Commission that have been and are being developed for transport infrastructure planning within the EEC(1). In presenting and analysing the work being carried out by the Commission and the Member States Infrastructure Committee it will be possible to indicate the important role that infrastructure planning can play in even mature economies such as the European Community. The paper has three principle sections;

- Section 1 firstly, the paper outlines the policy proposals for transport infrastructure in the EEC and attempts to demonstrate their relevance to EEC policies in general,
- Section 2 secondly, a brief description is given of the methodology and application of an evaluation system designed to highlight 'Community interest',
- Section 3 and finally, a summary is given of the work carried out in the development of a database for transport statistics and an associated transport simulation system which is available for infrastructure planning.

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The statements and opinions presented in this paper are those of the authors and should not be construed as being the official viewpoint of the European Commission nor the Netherlands Institute of Transport.

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SECTION 1

EEC TRANSPORT INFRASTRUCTURE POLICY

The objectives of the EEC are laid down by the Treaty of Rome (1957). This Treaty established the Community and amongst a number of other provisions, stipulates that two sectoral Community or 'common' policies should be developed and applied throughout the Community. These two policies are, respectively, the Common Agricultural Policy (CAF) and the Common Transport Policy (CTP). The importance attached to the development of a CTP by the founding fathers of the Community might at first sight seem strange. However, it should be recalled that the EEC was conceived fundamentally as an economic zone free of trading barriers among the Member States. As transport costs constitute real barriers to trade it was considered important that the Community should possess an efficient transport system that would reduce transport costs to the lowest practicable levels. When customs and other barriers to trade could be removed and transport operated efficiently it was considered that market forces could then be allowed to operate in order to maximise the industrial possibilities that the Community offered. The model for this development was the European Coal and Steel Authority(2) which had eliminated previous national barriers in the coal and steel industries and therefore permitted an effective rationalisation and development of facilities.

In practice the development of a CTP is not a simple matter. The Community, although possessing an extensive transport network, was unable to resolve some of the fundamental problems of the transport sector. At the core of the problem was the position of the railways. European railways had been subjected to extreme pressures in the 1939-45 war and subsequent years and little progress had been made to restructure the system in the light of the rapid development of a reliable and highly efficient competitor in the form of the road transport industry. The Community Members in tackling the problems of the railways were unable to agree on the foundations for a CTP that would cover the Community as a whole and would as a consequence have an important impact on the transport sector of every nation in the Community. The guiding principle of the CTP was to be freedom; freedom to operate and develop without controls and with only the minimum of governmental interference. The corner stones of this policy were to be the abolition of quantitative controls over road haulage, the realistic apportionment of infrastructure charges, and the institution of common quality controls in the shape of restrictions on driver's hours, vehicle characteristics etc. Having so purified the transport sector it was believed that efficiency would be

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attained through the application of normal commercial (free market) principles.

Unfortunately, only limited success was achieved in the implementation of these policy measures. Member States were divided into those who considered the proposals a threat to their own, already far from healthy railways, and those who saw the proposals as consistent with their own policies for transport. An effective compromise was virtually impossible to achieve.

It should be noted that a passive role was assigned to the development of transport infrastructure. When the question of infrastructure charges was resolved decisions concerning infrastructure planning would follow the trends that were indicated by the development of the freely competing industry. Partly as a result of the lack of success of the initial CTP proposals and partly due to the notion that infrastructure planning could serve to assist the achievement of Community goals in policy areas such as regional development, the mid-seventies witnessed a reassessment of the scope for infrastructure planning at the Community level. Although it was acknowledged that infrastructure planning should remain the reserve of national governments the view was taken that a Community interest element could usefully be added to existing national machinery. To this end a package of three measures were put forward;

- Firstly, that Member States should communicate projects of potential Community interest to the Commission for examination by the Infrastructure Committee,
- Secondly, that in order to appraise the consequences for the Community of major projects and to examine the general development of infrastructure the Infrastructure Committee was established. This committee is made up of senior civil servants responsible for infrastructure in the Member States. The brief of this committee is to evaluate the 'community interest' of projects and monitor the general development of Community infrastructure in general,
- Finally, for those national schemes that were shown to be of Community benefit but which for various reasons were not included in the respective national investment programmes the possibility of providing financial assistance would be considered. This assistance would be on the basis that the project would be included in national construction programmes at an early date.

The package could be seen as a continuing attempt to ensure that the Community had prior information on the

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specific schemes that the Member States were considering undertaking and that a forum, the Transport Infrastructure Committee, could ensure that developments throughout the Community were taking place in a consistent manner. The proposals were put forward by the Commission in the knowledge that infrastructure planning was both an innovation in the context of transport policy at the Community level and that the budget consequences of the scheme would be likely to create problems in view of general difficulties with the Community budget (the Community budget is largely devoted to agricultural support and consequently other policies experience difficulties in being funded). Nevertheless the value of infrastructure planning, both in the context of the considerable development of cross-frontier transport and in the possibility that was opened up for integrated investment planning, was such that considerable support for the proposals came from the European Parliament and other bodies. Not least among the possibilities was that of modernising the railways and hence making them more competitive and more commercial in their financing.

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SECTION 2

THE CONCEPT OF THE COMMUNITY INTEREST OF PROJECTS

A fully integrated economic zone having an efficient means of transferring resources from richer to poorer regions would not be considered to require a specific financial mechanism to assist transport infrastructure. Plans for the necessary developments would be formulated and the necessary financial arrangements settled through the integrated economic and financial mechanisms. No comprehensive mechanism yet exists in the EEC and hence if it is hoped to influence the spending patterns of the Member States in such a way as to favour infrastructure of 'Community Interest' it is necessary to arrange for Community financial support.

The justification for Community financial support, particularly in view of the budgetary problems that the Community is experiencing has to be particularly well developed. The basic concept lying behind the Commission's proposal is that certain projects will provide a stimulus to Community trade or to the achievement of Community objectives in such fields as the environment, regional planning, energy, etc. In the situation that national budgets for infrastructure are constrained by spending limits, a cut off point has to be imposed below which projects cannot be accepted into the national programme. Where a choice exists between schemes that are of greater benefit to the nation concerned and others that are of wider benefit to the Community there is a prima-facie case for intervention. The decision as to whether the Community is justified in intervening to offer financial assistance depends on the calculation of whether the additional benefits that the Community as a whole would derive from a project are sufficient to compensate the Member State concerned in replacing a national project with a higher national rate of return, by the project preferred by the Community. Another analogous situation is that of a Member State which, due to overall budgetary reasons, cannot allocate sufficient resources to the transport infrastructure budget to allow the system to provide the right quality of service for the Community, either in terms of transit transport or in the context of the achievement of other policy goals.

If this line of reasoning is in principle acceptable, there remains the problem of how to measure the nature and the extent of the Community Interest. It should be stressed again that the object of this exercise is not to substitute for an essentially national political process but rather to illuminate certain factors of particular interest to the Community that can then be included in these processes.

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In practice the nature of Community interest can be classified into two broad groups:

- first, factors that are related essentially to the free and efficient operation of transport in the Community,
- second, points associated with the wider aspirations or objectives of the Community in fields such as regional policy, energy conservation, economic convergence, etc.

In the first group, the Community has an obvious interest in maintaining a high standard of network of primary transport links within the Community. In addition, the provision of efficient links to Member States distant from the central 'heartland' is an obvious priority particularly when they are separated by water as in the case of Ireland and the United Kingdom or by non Member States of the Community as is Greece. Another area that the Community might also be legitimately concerned with is the question of the techniques adopted for new or rebuilt links to avoid the incompatibilities that are a feature of existing systems. In the second group the Community would have an interest in assisting the provision of facilities that were particularly related to the usage of internal sources of energy in the Community, or again to accelerate the programme of integrating less favoured regions into the main network.

An important aspect of the Commission's research programme in this area has been an attempt to identify the distribution of benefits among individual Members of the Community. This aspect of the work is important not only in the context of demonstrating the effectiveness of Community action to the individual Member States but also to provide guidance on the wider implications of infrastructure investment on economic and social development throughout the Community.

The basic methodology for the identification of Community interest has been developed using the framework of the various cost benefit systems that are currently in use by the Member States. The technique of cost benefit analysis has found a large measure of approval for the appraisal of infrastructure investment and a number of countries, notably the Federal Republic of Germany and the United Kingdom, have developed comprehensive techniques with wide application(3). The Commission's approach has been approved by the Council of Ministers(4), and a number of test evaluations have been undertaken of major investment projects. The Commission has prepared a manual on the evaluation of Community interest that it hopes will be of assistance to those responsible for the submission of projects for consideration. Although the use of the manual is discretionary, it is considered that the adoption of

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some standard approach will be useful in this context. As projects submitted to the Commission can come from at least ten countries and involve three land modes of transport, there is clearly much merit in the standardisation of approach in order to facilitate understanding.

The outline manual consists of two sections, the first contains general guidance on the information and the approach to be adopted in the submission of 'Community interest' investment proposals. The second section presents guidance on the presentation of results. The approach suggested concentrates on the use of clear and consistent methods. Wherever possible, the use of explicit models of consumer behaviour is recommended for forecasting and the revealed preference approach is suggested for the evaluation of intangibles. In order to simplify the use of the manual the Commission is currently sponsoring a project to devise a system on a microcomputer which it is hoped will both facilitate the task of the scheme sponsors and those who assess the submissions at the Community level.

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SECTION 3

INFRASTRUCTURE PLANNING

Effective medium and long term planning for transport infrastructure in the Community requires that a specific procedure be followed. In essence the procedure may be defined as:

- (i) Firstly, broad hypotheses need to be made concerning the future developments of the economy of the Community (this is often referred to as a scenario)
- (ii) Secondly, an estimate must be made of the transport demand consequences of this scenario in terms of freight and passenger traffic and the resultant demands for transport infrastructure (this is usually carried out using a transport simulation model which relates socio-economic variables to the demand for transport services)
- (iii) Finally, an assessment needs to be made of the performance of the transport infrastructure in the light of this estimated demand. The investment policies for infrastructure may then be appraised and amended, if necessary, to tune the investments profile to better cater for the anticipated demands.

Although such procedures are common to the Member States of the Community, there is nevertheless, a definite gap in the available tools needed to carry out such a procedure at the Community level. This gap in the available sources of forecasted information concerns the linkages between national scenarios and transport forecasts for which there was no defined mechanism. It was this gap that the Commission has attempted to fill by the development of a transport simulation system covering all Member States of the Community (10).

An essential element for such a system is a database that permits planning to be undertaken at this level. The position of transport statistics in the Community is, unfortunately, far from ideal for this purpose. On the freight transport side there exists, even if in unpublished sources, reasonable data sets for the movement of goods by rail and inland waterways. However, the situation for road transport, the sector that is often the largest carrier and exhibiting the fastest growth, is as yet unsatisfactory. The Statistical Office of the Communities has been able to assemble a matrix, albeit incomplete, for interzonal movements in the Community for the year 1970(5). Since that date nothing of a comparable nature has been produced. Given this lack of readily available data from the Commission's Statistical Office, the Transport Directorate of the Commission together with

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the Member States undertook a lengthy exercise to establish a data set and simulation system for freight movements in the Community.

This work carried out by the Netherlands Institute of Transport(6) involved significant efforts in assembling, from various sources, a database for freight transport movements for countries within the Community and for movements between Community Members. Data in the form required was not available for all countries and recourse needed to be made to analogy methods to fill these gaps. In addition to the assembly of a database, a freight transport simulation system was developed with the following components;

- (i) a model for trade between Member States
- (ii) a domestic freight model for each Member country
- (iii) a model for international freight transport between Member States which explicitly takes account of transit movements.

During the course of this work great difficulties were experienced in bringing together the data from the various national and international sources on a common basis. There were significant differences in the definitions and completeness of the data. (If one lesson has been learned from this exercise, it would be a plea for the establishment of a common basis for the recording of freight transport statistics within the European Community). This data set has formed the basis for a set of forecasts of freight transport movements in the Community to use directly in infrastructure planning.

The object of the Commission's efforts in this forecasting exercise was not to prepare what might be termed as "point" forecasts which provide single values for transport demand in the future, but rather to explore the broad transport demand consequences of various potential developments in industry, trade, etc using contrasting socio-economic scenarios. It was also hoped to be able to derive information concerning the potential of the transport sector for inclusion in large scale planning exercises. A strategic approach to planning of this nature finds much to examine in the field of freight transport but clearly on many parts of the transport networks it is not freight but passenger transport that is the prime user. For this reason the freight forecasts were combined with the results of the COST 33 inter-city passenger study(7) in an attempt to prepare integrated passenger and freight transport demand forecasts.

The COST 33 system was a natural choice for this purpose in that it covered the area of interest, all modes of transport, and equally as important, it already existed and could be used almost immediately. It was realised when considering this possibility that the COST 33 System had

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several major weaknesses as reported by the Study Team who carried out the work. As is often the case these weaknesses stemmed from a lack of reliable data on European passenger data suitable for the development of a reliable simulation system. We also considered that whatever criticisms were being levelled at the COST 33 Study it still represented the only available attempt to forecast long distance European passenger transport movements, and, given the resources expended on this study and the fact that similar problems in terms of data availability would also accompany any new attempt to repeat this work, it was decided that this system should be used.

Account was also taken, in reaching this decision, of the fact that the conventional sub-model structure of the COST 33 system would allow the replacement of specific sub-model components in the future as European passenger models were improved as a result of improved data sources. In this sense the Commission considered that it was better to consolidate what had been accomplished in European passenger transport forecasting, rather than, at this stage embarking upon another costly and lengthy transport study.

Consequently a project was instigated(8) to integrate the previously developed freight simulation system with the COST 33 model system. Some work had to be carried out in order to update(11) and re-assemble the system, and to bring it onto a common base in terms of the socio-economic inputs and the transport networks. (In fact the regional stratification of the two systems was different although the level of definition, in terms of the number of regions was basically the same). This integrated system has been used to examine a series of socio-economic and transport strategy consequences for the years 1985 and 2000(9). Two scenarios were examined, one based on a pessimistic Community growth and one on an optimistic growth. In addition a high energy price scenario was also investigated. These uses of the system have enabled broad conclusions to be made concerning the future requirements for European transport infrastructure.

For the future the Commission has available a tool which can assist infrastructure planning at the Community level. This integrated transport demand system has several possible areas of application;

- (i) it provides the Commission with a comprehensive tool to assess the likely developments in the European transport market into the medium and long term
- (ii) it allows a global exploration of options to be undertaken given a range of assumed socio-economic scenarios
- (iii) it can assist the Member States to identify the

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- Community interest element of proposed infrastructure investments
- (iv) it can provide Member States with country to country transport estimates to supplement national information
 - (v) it can provide global national estimates of transport for countries where these do not exist under a specific scenario
 - (vi) it can be used by Member States to provide the framework within which more detailed studies are to be carried out (i.e. assist in the definition of the boundary conditions for such studies)
 - (vii) it can be used by Member States as an initial sieve to identify corridors of potential investment before undertaking more detailed studies
 - (viii) it can be used to examine the broad transport implications of specific regional policy decisions (e.g. changes in industrial activity or industrial locational changes) prior to more focused studies
 - (ix) it can be used to assess, the often difficult to quantify, wider implications of port or terminal improvements where the likely benefits are spread over several countries

It should be said that there are areas of the system in which some further improvements could be made were the necessary data readily available, but in its present form the system offers a unique tool for infrastructure planning in the European Community.

TRANSPORT INFRASTRUCTURE PLANNING IN THE EEC**CONCLUSIONS**

In presenting this brief summary of transport infrastructure planning in the European Community it has only been possible to touch upon some of the aspects related to the development of a common infrastructure policy for the EEC. The experience in the USA notwithstanding, it is believed that the approach adopted in the Community, notably in relation to the attempt to identify the Community interest of projects and the development of Community wide forecasting system, breaks new ground in infrastructure planning. The shortcomings of the available data set in the Community currently limit the scope of the system. In the short term it may be necessary to limit the application of the system to the major transport links which can then be the subject of special data collection exercises. In the longer term it is hoped to assemble a database related to inter-zonal transport movements throughout the Community which will form the basis of a regularly updated infrastructure planning system for the use of the Community and its Member States.