SESSION 1 – PLANNING INFRASTRUCTURE DEVELOPMENT

CONTRIBUTION

“The Concept of Corridors and Networks in Developing Pan-European Infrastructure”

by Christian Reynaud

(France)
TABLE OF CONTENTS

I THE CORRIDOR APPROACH 4

1. Historical background to corridors ................................................................. 5

1.1 US experience with work on the North-Eastern corridor in the 1960s ...................... 5
1.2 UN experience in the 1980s ............................................................................. 5
1.3 The joint ECMT and European Commission initiative at the Crete Conference .......... 6
1.4 From the Crete Conference to the 3rd Pan-European Transport Conference in Helsinki ...... 9

2. Some lessons learned from corridor approaches .................................................. 13

2.1 The spatial and territorial dimension: the local and global level .......................... 13
2.2 The transport dimension: from modal to multimodal land and maritime transport ...... 14
2.3 The operational dimension: collaboration and modes of appraisal .......................... 15
2.4 The time dimension: from the short and medium term to the long term .................. 16

II NETWORKS AND CORRIDORS 17

1. From corridors to networks .............................................................................. 18
2. From network to corridor .................................................................................. 22

III THE NEW PAN-EUROPEAN DIMENSION CREATED BY THE OPENING UP OF THE MEDITERRANEAN 28
The corridor and network concepts arose in two different contexts for the development of pan-European infrastructure:

- At the level of the European Union with the planning of trans-European networks, recognised in the Treaty of Maastricht as an important stage in a process designed to meet the twin objectives of integration and cohesion;
- At the pan-European level, namely a Europe open to the East and to the South in the Mediterranean region, with the identification of the priority extra-Community corridors adopted at the Pan-European Transport Conferences in Crete and Helsinki.

These two concepts are not part of an abstract approach to infrastructure development. Each one, in its own particular field of application, has given rise to legally binding documents backed by the full authority of international agreements. They have both enjoyed the benefit of funding frameworks relating to development aid or the harmonisation of national policies.

With the enlargement of Europe, we are now entering a new phase that poses a two-fold problem. The first is that of the revision of trans-European network policy within an enlarged Europe, which EU institutions are preparing to undertake in 2004. The second is the question of how to adjust infrastructure development to the new neighbours that enlargement of Europe further eastwards, from the Russian Federation to the countries of Central Asia, as well as to the South and the entire Mediterranean region.

This does not mean to say that these two concepts should be viewed as being mutually opposed; on the contrary, they can be mutually rewarding, given past experiences, as well as operationally effective, which has often proved to be their strength even during periods of severe conflict in the Balkans or the Middle East. The objective is always to produce the most pertinent design possible for infrastructure projects with a view to "optimising" their use, including operating modes and regulation, in a multimodal approach designed to provide better-quality transport services between countries in order to benefit consumers.

This first purpose of this paper is to review this historical background to the development of the corridor and network approaches in order to learn a number of lessons with regard to the future development of transport infrastructure in a new Pan-European area, with particular reference to relations with countries in the Mediterranean region.

The first part of this paper focuses on the historical background to the corridor approach and the need for it to lead to operational measures between countries and in particular a common basis for the choice of priorities.

This historical background is in particular that of the Pan-European Conferences, whose follow-up since the Helsinki Conference has been entrusted to the ECMT.

The second part will focus of the complementarity of the network and corridor approaches, with particular reference to the TINA programme and the "Balkans strategic network", not to mention the lessons that can be learned from the latter and subsequently be applied to trans-European networks within an enlarged Europe.

The third part of the paper will turn towards the future development of pan-European infrastructure, examining the scope for closer links between land and maritime modes with particular reference to the Mediterranean area.
I THE CORRIDOR APPROACH

There is no basis in scientific theory for the corridor approach as there is for networks in the fields of operational research, geography or even the occasional application in the transport sector.

In contrast, there are numerous examples of, as well as practical experience with, the use of a corridor approach in, admittedly, widely varying contexts where in most cases the aim is to resolve a specific problem of co-operation between partners developing links along a given corridor in which they have a shared interest; a certain pragmatism always lies behind the original decision to promote a corridor.

With the enlargement of the European area, this practical experience with corridors developed into more formal arrangements as well as agreements between national and international institutions.

The outcome is that experience with a given corridor has not always proved beneficial in the development of subsequent corridors, given the degree to which the particular context, objectives and partners involved can vary from one project to another.

After briefly presenting these projects in chronological order, this paper will attempt to draw up a brief summary of the project objectives which justified a corridor approach as well as the main implementing measures which ensued from these experiences.
1. Historical background to corridors

1.1 US experience with work on the North-Eastern corridor in the 1960s

If we take an example from the more recent past, one of the first projects to leave a mark on transport planning was the development of the North-Eastern corridor in the United States during the 1960s.

The North-Eastern corridor, which runs from North of Boston to South of Washington D.C., was designed to address resolve major congestion problems arising from high rates of traffic growth that were a major source of concern for the future of the United States; the aim was to adopt a long-term approach to infrastructure development, traffic allocation and modal split. The "strip" of national territory analysed was relatively wide and provided a framework in which to simulate possible transfers and allocation of traffic between routes, particularly passenger traffic.

Experience with the North-Eastern corridor in the United States had a knock-on effect on subsequent work and in particular led to development of the first multimodal models at Princeton University.

1.2 UN experience in the 1980s

In this particular case, the concept of "corridor" was defined in particularly broad terms in that it was used to refer to the general alignment of international traffic flows within the European area.

The major routes selected were those linking:
- The Maghreb, Spain and Northern Europe;
- Scandinavia and Italy;
- The Baltic States and countries bordering on the Aegean and the Black Sea, focusing in particular on links between Poland and Greece which were the two major players in this corridor.

This choice of corridors therefore covered a large portion of the UN-ECE area, apart from the USSR, and gave priority to links between North and South and access to Northern Europe and the Mediterranean.

The first corridor linked countries with highly disparate levels of economic development and required barriers such as the straits of Gibraltar and the Pyrenees to be overcome; the associated plans were drawn as Spain and Portugal prepared for accession to the European Union.

The second corridor also required a number of natural barriers to be overcome, the main one being the Alps; measurement of transit traffic, particularly through West Germany, was a central issue in this respect.

In the third case, it needs to be recalled that Europe had yet to open up to the East and it was only later that traffic flows began to grow rapidly in an East-West direction. At the time, the objective was to take stock of existing trade flows between Northern and Southern Europe as well as through the countries of Central Europe. The study in question was a long-term project addressing Trans-European-Motorways (TEM) extending from Poland to the Eastern border of Turkey. This initial TEM project was subsequently matched by a TER project for rail transport (Trans-European Railways).

These projects were not of an overtly political nature and mainly involved national research agencies and study centres, even though the long-term objective was indeed to help bring countries closer together, strengthen co-operation, facilitate trade and provide better co-ordination of policies and investment.
Besides general concerns over the harmonisation of UN standards and of criteria relating to infrastructure and traffic flows, these studies on corridors focused on several issues:

- The multimodal approach and intermodal transport;
- The development of transport databases and in this respect support for the creation of research agencies such as CETMO (Transport Study Centre for the Western Mediterranean) in Spain and TRANSCEM (Study Centre for the Eastern Mediterranean) in Greece, despite the different development path followed by the latter;
- Lastly, work on specifications.

The main results of work on these three corridors were presented at a final conference in Volos in 1991 where presentations were made of the experience acquired in modelling and forecasting traffic flows.

**1.3 The joint ECMT and European Commission initiative at the Crete Conference**

This was without doubt the most important initiative involving a corridor approach and was set against the highly politicised background of the early stages in the process of opening-up to Eastern Europe. This initiative was backed by commitments at the very highest level by international organisations and governments.

The framework was that of the Second Pan-European Transport Conference (1994) which hosted representatives of not only major international organisations such as the ECMT, UN and European Commission, but also those of the countries Western and Eastern Europe; many Mediterranean countries were also present.

The first Pan-European Transport Conference had been held in Prague shortly after the collapse of the Berlin Wall and had not really left sufficient time for in-depth discussion of the development of international transport in relation to the new geopolitical context and of practical proposals of strategies to adopt towards the rapidly changing situation.

The ECMT, which had very swiftly found itself at the forefront of the debate and in direct contact with countries of Central Europe, even if only to open discussions on the first multilateral permits, had already started to study the new needs in terms of international transport by the early 1990s. The Conference then opened discussions on the criteria to apply when choosing priority projects in Central Europe. Desiring a rapid outcome in practical terms, the Council of Ministers at its session in Noordwijk in 1993 proposed that specifications be drawn up of the corridors on which international development aid should be focused.

The UN-ECE and the European Commission were partners in this approach and in fact the UN-ECE had always remained in contact with all European countries due to its work on transport standards and the technical characteristics of networks, namely the AGR for road transport, the AGC for rail transport and the AGTC for combined transport, to which an ever-increasing number of countries have signed up both in Eastern and Western Europe.

On the basis of the above efforts and the initial work of the European Commission on development of a European transport policy provided a basis on which a document drafted jointly by the three Organisations (Towards Indicative Guidelines for the further development of Pan-European Transport Infrastructure¹), setting out the specifications for 9 priority corridors for Central and Eastern Europe, could be presented at the Crete Conference.

¹ Report by the General Directorate for Transport drafted by Mr Coleman.
This report provided a mix of short, medium and long term objectives.

The long-term outlook made reference to the creation of Europe-wide networks and in particular those already developed by the UN\(^2\).

The medium-term objectives referred to Trans-European Networks in the case of the European Union and to priority corridors in the case of the countries of Central Europe.

The short-term objectives, to be completed within approximately 5 years, took the form of an initial list of concrete projects, given that the new partner countries from Central Europe would not be satisfied with plans for action too far in the future.

This approach was described as a "three-layer" approach towards creating a determinedly multimodal system as the intended outcome of a process designed to evolve as data on traffic and financing, or political agreements, gradually started to take shape.

The nine corridors themselves were charted on maps that continue to have many impacts on policy towards prospective infrastructure and that mentioned the names of a few cities located along the main axis of the corridor or related trunk roads.

This document also provided a number of details regarding the eligibility criteria for projects within priority corridors. An initial list of "potential candidate" projects for the shortest term objectives (layer 3) was established.

This initiative provided the basis for infrastructure policy in Central Europe, giving rise to a series of more detailed studies "by corridor", from both a technical and a political standpoint, as well as the signature of a MoU (Memorandum of Understanding) between countries. It also had an impact on national and international funding decisions and in most cases provided a framework for national transport plans in the countries of Central Europe.

\(^2\) AGR networks for road transport, AGC for rail transport, AGTC for combined transport.
This work was subsequently pursued within the framework of the TINA programme (Transport Infrastructure Needs Assessment), which will be discussed later in this paper.

### 1.4 From the Crete Conference to the 3rd Pan-European Transport Conference in Helsinki

After the Crete Conference, the corridor concept became more substantive by acquiring connotations of a technical, methodological and political nature:

- Technical because the aim was now not only to think in practical terms about infrastructure projects but also, and above all, to consider a series of accompanying measures designed to facilitate trade, border crossings, standardisation and the harmonisation of operating systems;
- Methodological through the development of a multimodal approach and the promotion of intermodal transport chains that included maritime links;
- And political because any project aimed at creating corridors in many cases called for agreements between actors and governments.

The phase that followed the Crete Conference also saw efforts to generalise the use of the corridor concept in the sense of implementing a new international practice for infrastructure planning, not only in Central Europe but also in co-operation with the other countries sharing a common border with the European Union.

In practice, this generalisation took the form of:

- The opening-up of areas that had not been taken into account in Crete, in particular the countries of the former Yugoslavia; one outcome of this was recognition of corridor "X", which thereby acquired a status comparable to that of the nine corridors established previously at the Helsinki Conference;
- Discussion of the TRACECA linking Europe to Central Asia;
- Lastly, an attempt to define corridors within the Mediterranean region on the same basis as those established for Central Europe after taking due account, obviously, of the specific geographical context of this region in terms of the importance of shipping.

The account taken of peripheral maritime areas with the introduction of PETRAs (Priority Transport Areas) proposed at the Helsinki Conference for Northern Europe, the Barents Sea and the Mediterranean was to remain fairly loosely defined for a number of years until fresh impetus was lent to this concept in the European Community's White Book through development of the so-called "motorways of the sea".

In the meantime, however, the corridor concept had been applied in a number of interesting ways in the Mediterranean region with the proposal of new corridors at the Helsinki Conference for the inland portion of the Mediterranean region.

With regard to the maritime portion, there are a number of more recent developments aimed at ensuring a vision consistent with inland corridors currently in progress. This integration of a maritime link into a corridor was given fresh momentum in early 2003 through the work of the Van Miert group and the latter's proposal to integrate "motorways of the sea" into a list of priority corridors in Europe.

The first proposals relating to the Mediterranean were drawn up within the framework of the CORRIMED and REDWEG projects.

---

3 MEDA-TENT project linking Trans-European Networks to Mediterranean networks.
The CORRIMED project consisted in identifying corridors through direct co-operation with the representatives of the Mediterranean countries concerned as part of the preparations for the third Pan-European Conference. As in the case of the Crete corridors, a multimodal approach was adopted and was to be accompanied by sufficiently precise route planning (in the form of maps) to persuade the partners of its practicality, which would then lead relatively swiftly to project development and co-financing schemes.

The multimodal approach adopted at this stage meant paying particularly close attention to the ports and airports located within corridors in the knowledge that there are relatively few rail-road combined transport facilities in the Mediterranean region due to the limited coverage of railway networks which do not have proper interconnections between countries in the Southern Mediterranean region.

The CORRIMED project therefore resulted in the publication of a number of maps in which several major areas can be distinguished:

- An Eastern Mediterranean area, including Turkey in particular, where two major corridors have been identified, although uncertainties remain on the inland continuity of these corridors through Syria, Iraq and Lebanon
- A Near East Zone comprising Israel, Jordan, the territory administered by the Palestinian Authority and Egypt; a more detailed and in-depth study was made of this area as part of the REDWEG peace process programme, which deserves special mention.
- The Maghreb area where the major corridors have already been studies and discussed within the framework of UMA (Arab Maghreb Union) and which had been extended in co-operation with the countries of Southern Europe (France, Italy, Spain and Portugal) within what the GTMO (Group of Ministers of Transport of the Western Mediterranean), with which the European Union is associated.

The planning of these corridors obviously took account of the Maghreb Motorway whose sections located in Morocco, Algeria and Tunisia, as well as the extension to Mauritania, have in large part been completed; the cross-border links, however, are not yet finished. These links reflecting the interdependence of the Maghreb countries are at present harder to justify in terms of traffic volumes, particularly in view of the extremely low levels of goods traffic; the international community could surely find appropriate areas here for aid and intervention. In addition, there is the Maghreb railway corridor, which is currently being put in place at a far slower pace in view of the weaker share of rail in the modal split and the handicap in those countries of having railway networks that are more geared towards providing links between industrial centres and ports than towards rail freight services between individual countries, which in fact are practically non-existent.

This work of reflection also includes studies on the Gibraltar fixed link connecting Europe to North Africa and also to regions further South on the African continent, as well as those relating to the role played in these corridors by port and airport complexes.

In conclusion, the CORRIMED project made it possible to secure, given the political context at that time, the co-operation of a large number of Mediterranean countries which were able to set out detailed objectives for the development of infrastructure in the Mediterranean region, although differences still persisted according to the area concerned and particularly those between the Western and Eastern Mediterranean as a result of the existence, or conversely absence, of co-operation in this area. The outcome was unlikely to be seamless, even though the approach and stated objectives were as a general rule properly understood and appreciated, given that the continuity of these corridors would not be fully ensured either in an overall approach to the Mediterranean perimeter due to political conflicts or tensions in certain area, particularly the Balkans and a large area in the Eastern Mediterranean.
As part of the peace process, one particular application (REDWEG) was pursued despite difficult relations with the neighbouring countries of Syria and Lebanon in an attempt to benefit from the experience of the opening-up of relations with Eastern Europe; it proved to be a success, even through the implementation of projects subsequently had to be interrupted for political reasons.

It needs to be borne in mind that this peace process consisted of a series of actions involving a large number of countries which shared out the work covered by the initiative by major sectors ranging from security, emigration, water supply, development, etc. The European Union had responsibilities for special initiatives regarding development issues, one of which being transport, where France had become involved more directly as a Member of the European Union.

The use of the term "success" means that governments were able to reach an agreement on international co-operation in the transport area at an official meeting of national representatives even before the Pan-European Conference in Helsinki. From this standpoint, transport was in the vanguard of political agreements of a more general nature, as has been the case on a number of occasions following periods of conflict between countries, irrespective of the area in question. The agreement covered four corridors in an approach that had been suitably tailored to the context of the peace process.

One essential aspect of the approach related to the need to undertake short-term -- even very short-term -- projects in order to restore broken links between countries for the sake of security (\textit{Fast Track Projects}), with medium and long-term projects based on the working hypothesis of a return to peace.

Corridors also had to be described in sufficient detail to be able to identify the infrastructure concerned, as well as certain types of operating and monitoring procedures in order to be able to guarantee that concrete actions would actually be initiated.

This approach also had to be sufficiently flexible to offer, through short-term constraints, prospects for long-term peace and to encourage development of a transport network within the area as a whole.

Lastly, the very balance of corridors must allow each country to gain its own advantage within the overall balance of the area. A proper balance had to be struck with regard to the problems posed by the population densities of certain areas in Israeli territory and the Gaza strip, the issue of Jordan's vocation as a transit country, the problem of the severance of the territories administered by the Palestinian Authority, the role played by Egypt in major world and international transit flows, etc., access to the sea being an essential issue alongside the restoration of links between very large metropolitan areas that are geographically very close.

This balance was therefore achieved by means of four major corridors:

- A coastal corridor;
- An inland transit corridor from Egypt to Jordan;
- A corridor providing access to the sea, running between Jordan and the port of Haifa;
- A corridor connecting the major cities in the Gaza strip to Amman via Jerusalem.

The corridors took the form of clearly identified geographical strips that also included specific network components as well as a number of access roads to towns and cities, together with the signing of alternative routes within corridors. One of the major concerns was to ensure sufficient readability between the local, regional and international levels of access.

The identification of corridors was at the same time presented as part of a process of long-term development and not simply as a specific agreement for a period of transition. In particular, it provided for
the creation of databases, the formulation of assumptions for long-term scenarios and for a context of newly restored peace. The corridor clearly appeared as the practical outcome of an entire process and approach that had to be pursued over a period of time.
2. Some lessons learned from corridor approaches

It still remains difficult to establish a method for a corridor approach given the extent to which experience shows that the efforts undertaken have been dependent upon a particular context.

It is nonetheless possible to say where the interest of adopting such an approach lies, given the results obtained and the objectives underpinning those results.

In very general terms the corridor approach can be said to be a product first of a need to globalise, to have a more general approach to transport more closely aligned to not only economic activity but also the need to be operational, to take practical action: there is a "decision-making aspect" to the corridor approach and because of this what might even be termed an institutional dimension.

In figurative terms we could say that the implementation of a transport policy is being evaluated at two separate levels: at the level of the project (or specific action) and at that of a general transport plan (or general transport policy), neither of which can be readily interconnected.

The corridor concept occupies a slightly intermediate and more operational position between evaluation of a project whose framework is too restricted and evaluation of policy towards transport networks where the interactions are too complex to understand and use as a basis for deriving an operational approach.

The corridor concept therefore becomes a kind of bridge between local and global constraints in the communications area, between individual and collective decisions, between modal and intermodal approaches, between short-term and long-term decisions, all different facets of the diversity of experiences.

2.1 The spatial and territorial dimension: the local and global level

The corridor concept focuses on major trade routes and on the interdependent economic and social activities along those routes, in terms of both local links and long-distance communications.

A corridor can therefore be defined as a strip of land whose width may vary but which always presents a risk of a dilution of the analysis and responsibilities if the "strip" is gradually widened by incorporating an ever-greater number of interdependent relations within corridors such as branches, lateral links, crossroads, alternative routes or even competing links.

A balance needs to be struck in practical terms according to the goals pursued by the different types of partner involved.

While it is always possible from a technical standpoint to specify "connectivity" indicators within a transport network with reference to the links between individual segments, or even nodes and segments, these indicators are not sufficient to define the requisite "thickness" the corridor must have in order to be able to accommodate intermodal or alternative solutions or to integrate the administrative areas concerned where a certain degree of local responsibility is exercised.

An important issue in the specification of corridors will therefore be how they are mapped. Corridor maps are always a highly charged issue; too general a geographical field will only be of use to policies of a similarly very general nature, limited, for example, to heads of agreement on co-operation between countries, as was the case for the UN corridors. The benefits that can be gained more readily through the use of consensus, however, will be lost at the implementation stage.
It is worth noting that advances in GIS technology now permit precise graphic representation in which a variety of information can be displayed; the current trend is therefore towards precise geographical representation reflecting this variety of information. This outcome is precise representation of segments and nodes, rural areas and towns crossed by traffic flows, even if it only serves provide a clearer picture of the areas where practical action is required and the associated projects. This geographical tool provides a new framework which permits a clearer, more precise and rigorous approach and which we must not be afraid to contend with.

It is probably a cause for regret that past representations of corridors were too approximate, mentioning only a few towns by name and subsequently making it harder to find solutions; in reality, each stage is subject to its own individual constraints and while initial heads of agreement must sometimes be established on the basis of relatively imprecise representations, the description must become increasingly accurate as progress is made in the decision-making process. The corridors initially agreed in Crete did not make precise references to given types of infrastructure and a substantial amount of mapping work was subsequently undertaken within the framework of the TINA group.

2.2 The transport dimension: from modal to multimodal land and maritime transport

Adopting the "multimodal" approach enables planners to consider several modes. Once the direction of traffic flows has been determined, several routes and several modes are taken into account within the corridor.

The introduction of the "intermodal" dimension is another stage that consists in considering not only segments but also interchange nodes which are points of intermodal exchange that increase the number of potential solutions by offering combinations of modes and new routes.

It is therefore increasingly necessary to link the assessment of infrastructure projects to the operation of this overall transport system by associating investment in infrastructure with infrastructure use, which can only be assessed within a larger framework, in this case that of the behaviour of transport flows within the corridor; the corridor is seen as the "minimum space" needed to be able to consider the use of transport infrastructure in accordance with the needs expressed, available capacity and the possibilities afforded by the existence of alternative routes.

The need for an overall vision of transport inevitably lends greater importance to the operation of transport systems, leading to new definitions such as "intermodality" for rail transport and cabotage, interconnectivity, interoperability; the aim here is not to revisit these concepts but simply to emphasis that they are far easier to apply in the context of a corridor on the basis of a more "linear" form of operation where the actors are identified more clearly than they would be in a network approach, particularly at the international level.

One question that still remains open is that of sea corridors, or "motorways of the sea", which cannot be treated solely as a maritime link between two sections of inland corridor as in the case of ferry services for sea crossings from ports such as Calais, Oresünd and Gibralter.

Maritime routes must also be taken into account in the geography of Europe as a viable alternative to inland routes and to road routes in particular given that the objective is transfer traffic away from the roads to alternative modes. The idea is therefore to promote the use of "maritime intermodal" links in Europe chains by means of horizontal (RoRo) or vertical (LoLo) operations and in many cases hybrid vessels that can accommodate either technology or even Ropax vessels combining passenger and freight transport.
2.3 The operational dimension: collaboration and modes of appraisal

This aspect is of paramount importance on two counts.

Firstly, transport flows are organised at the local, regional, national and international levels and corridor use must take full account of this aspect in order to avoid potential conflicts between different types of traffic over infrastructure access.

Secondly, transport is subject to the decisions taken by government at various levels within the institutional system, namely transport planning, regulation and above all funding.

In many cases, mobilising actors for a given project therefore presupposes co-operation and collaboration between those levels, not to mention consultation with the local population and users who may themselves have conflicting interests.

This need for co-operation calls for a new approach to evaluation and decision-making processes. In addition to the economic or socio-economic justification for a given project, there is a further need for decision-making to be lent "democratic" legitimacy through respect for the scope of intervention of each institutional level, which in some cases may take priority over socio-economic criteria relating to profitability.

In such a context, a corridor becomes a kind of "laboratory" in which projects are chosen and decisions implemented, and in which an entire process of evaluation, with its phases of analysis and discussion, is gradually put in place over time.

Even when the first definitions of the corridor concept were put forward at the Crete Conference, the ECMT had already stressed the need to reformulate the relevant guidelines and evaluation processes and to that effect had drawn up a new list of evaluation criteria. The work conducted by the TINA group clearly identified the issue of evaluation in priority corridors as a critical aspect of successful co-operation between national levels and the international level. The IFIs (International Financial Institutes) were participating parties in this development and showed a keen interest in the procedure as a means of refocusing their mode of intervention, which hitherto had been dominated by the more conventional methods of project appraisal.

It thus became clear that corridors could offer an exception framework for institutional co-operation in relation to this need to clarify the evaluation criteria that needed to be taken into account.

This approach was then accompanied by the creation of databases and monitoring stations, as in the case of Alpine crossings, and by the more formal specification of scenarios for alternative policy choices, leading ultimately to the creation of an entire system of analysis in which corridors were the choice field of application.

A fully synergistic relationship can thereby be forged between the creation of specific tools (databases and models), the formulation of future choices (construction of scenarios) and the specification of fields of application (corridors) guaranteeing the operational nature of the entire process; it was the adoption of a formal corridor-based approach which was proposed as part of the "peace process" in the Middle East for the identification of priority corridors.

---

4 As part of the REDWEG project co-ordinated by INRETS (C. Reynaud, G. Chatelus).
2.4 The time dimension: from short and medium to long term

This aspect is not in fact independent of the preceding ones and has a particular influence on the credibility of the initiation of a procedure. In practice, analysts often speak of a combination of fast-track projects and long-term projects.

The linkage between the short, medium and long-term components of a strategy or series of actions is generally a difficult issue to deal with when seeking to achieve a consensus among the parties concerned. It has been possible to reach such agreements, as in the case of the Crete Conference with an initial list of short and medium term projects or, as in the case of the Amman Conference, with the selection of fast track projects based on a longer term approach.

The list of projects recently drawn up by the Van Miert group gives details of how projects along the major corridors with deadlines for completion ranging from 5 to 20 years are to be dovetailed together, as well as details of projects currently in progress.

Applying such linkage between short and long term planning to the construction of corridors makes it more tangible and lends it substance, as the above examples show.

The corridor approach has thus enjoyed renewed interest in recent years in response to crisis situations requiring credible decision-making processes for the short, medium and long term. The issue at stake, however, is also that of finding a new mode of infrastructure planning.

The recent report by the Van Miert group cites this corridor approach when setting out the criteria for prioritising projects in the networks of an enlarged Europe in order to make the planning of projects at the international level more coherent.
II NETWORKS AND CORRIDORS

It is clear from the preceding review of the benefits of adopting a corridor approach to the implementation of policy and construction of a framework for co-operation that on no account should a corridor approach be portrayed as being the opposite of a network approach.

In the first document to describe priority corridors submitted at the Crete Conference, the authors took great care not to present the two approaches as mutually opposed. Indeed, the Crete Conference was held shortly after signature of the Maastricht Treaty which formally recognised, under Title XII, the importance of Trans-European networks, and not simply transport networks, for European integration and cohesion.

Accordingly, priority corridors were first identified in the Central and Eastern European countries and in trans-European networks within the EU area. However, although all infrastructure within this corridor had to be mutually compatible, the prolongation of priority corridors within Trans-European Networks had not been "formally" identified.

A difference clearly existed here, due to the context of the intervention. In the case of Central Europe, action had to be taken rapidly to address a new situation and to earmark a number of practical operations to be completed within the short term to demonstrate the willingness to co-operate of the partners concerned, as stated earlier.

However, the papers at the Crete Conference also referred to the concept of "networks". The work of the UN-ECE on road and railway networks were described as providing a long-term framework for that area and, in the case of the European Union, reference was made to the Trans-European Networks that were to be integrated with the priority corridors.

This issue of Trans-European Networks and priority corridors in Europe was addressed in a large number of research studies conducted under the fourth FPRD, and notably in the work of CODETEN and TENASSES which are all based on case studies and discuss the adjustment of evaluation methods. The debate over networks and corridors was also an important issue in the work of estimating and forecasting traffic volumes in the development of European models. This was the case, for example, for the SCENARIOS and STREAMS projects for the European Union, SCENES for an enlarged Europe, as well as the THINK-UP and EXPEDITES projects which allowed comparisons to be made of national and European approaches in that area.

A highly comprehensive reference document on the subject providing a historical overview of networks and corridors as well as an analysis of the limits to these approaches and the prospects for improving the related project appraisal procedures is the publication "Going Transeuropean".

Without seeking to sum up these papers on networks and corridors, this paragraph will limit itself to recalling a number of aspects of the dynamic relationship that has emerged between these two concepts, with particular reference to certain aspects of the transport policy pursued over the past two years, in order to demonstrate that these two approaches are complementary rather than opposed, as the first "seminal" texts on corridors had initially suggested.

---

5 Research co-ordinated by ICCR (Austria).
6 SCENARIOS co-ordinated by INRETS, STREAMS and SCENES by MEP, THINK-UP by NESTEAR and EXPEDITES by RAND Europe.
7 Author: Mateu Turro.
1. From corridors to networks

A corridor always remains to some extent one of the components in a network and it is therefore logical that a corridor approach should lead to a network approach once the discussion seeks to become more comprehensive by demonstrating the interdependence of competing or complementary corridors. This expansion is also necessary when account is taken of flow concentration and dispersal operations in the use of infrastructure and in particular the creation of hubs for maritime, air, road and rail transport.

The first initiatives in the analysis of European infrastructure itself were based on a corridor approach: OECD Action 33 in the early 1970s; the analysis of major projects such as the Channel tunnel; the Paris-Brussels-Cologne-Amsterdam-London TGV (PBKA). The first report by the ERT (European Round Table of European Industrialists) laid the emphasis on missing links in Europe and implicitly referred to corridors rather than networks.

From a technical standpoint, it is quite clear that simulating traffic flows within a corridor fairly rapidly requires the corridor to be placed within a network. When considering several corridors at the same time, the configuration of an underlying reference network must be specified because it is this network which supplies the traffic flows within corridors. Analysts speak in terms of the "core" network and its branches.

From this standpoint, it is important to bear in mind that the first Trans-European Networks, prior to the Treaty of Maastricht, were the European high-speed train network and the combined (rail/road) transport network.

Prior to construction of an initial section of TGV line in France and the FRG, after the PBKA study, the future of this new mode could only take form within the framework of a Europe-wide network, designed as a core network with branches towards various countries or regions and ultimately aimed at ensuring relatively comprehensive coverage of the entire European area.

The objective in the case of combined transport was to identify the main routes within Europe which were likely to concentrate a sufficient volume of traffic to ensure the profitability of combined transport.

In both cases the original aim, based on a relatively large-scale investment programme, was to endeavour to increase traffic densities in order to make operations profitable at the European level; geographical coverage was an afterthought designed to attract the interest of a larger number of countries or in some cases meet their requests for access to these networks.

The concept of Trans-European Networks presented in the Maastricht Treaty gave a very different and more political connotation to the "networks" designed to cover the European area. European networks were the expression of spatial cohesion and one of the conditions for proper functioning of the single market.

Nevertheless, it was not specified whether networks were a prerequisite for the proper functioning of the single market, given that the Treaty also stated that development of the network must meet the needs expressed in demand. Accordingly, it was also possible to interpret infrastructure as a response to market demand driving the choice of infrastructure itself, charging regimes and operations.

The issues at stake in this debate also included access to funding, with Trans-European Networks as both the "vector" for the creation of Europe and its final product.

Resolving this problem therefore requires a search to be made for a balance between "accessibility" to the more peripheral or landlocked regions of Europe and the "profitability" of projects.
While not wishing to dwell on these interpretations, which have given rise to numerous developments, what we have here too is a practical example of a gradual shift away from the corridor concept to that of a network, as illustrated by the TINA experience.

The TINA exercise offered the opportunity for a more homogenous approach to all ten priority corridors. The ten priority corridors formed what was termed the *Tina "backbone" network*, which remained the priority objective but to which were added a number of other important connections between corridors to form the "TINA network".

From a methodological standpoint, it thus became possible to strengthen the relationship between the development of major international axes and those set out in national plans. At the same time, however, there was an increased risk of multiplying the number of priority projects. Work was therefore undertaken on project-funding capacities with a discussion regarding the definition of evaluation criteria that could be applied to Central Europe as a whole.

To estimate funding capacities, the potential for government financing was calculated as a percentage of national wealth and compared with the potential scope for international funding, EU grants and possible loans from the EIB or other International Financial Institutions (IFIs). The share of GDP that could be assigned for investment in the TINA network was estimated at 1.5%, although account was taken of the fact that the borderline between an investment project with a national objective and an investment assigned more specifically to the TINA network is always hard to establish. Compared with the situation in EU Member States where this percentage had fallen below 1% for all types of infrastructure, including regional infrastructure, there was a clear indication that a special effort was to be made to support the said TINA network. In the case of international funding and EU grants in particular, it was only possible to run simulations on the basis of experience with grants awarding from the regional development funds of cohesion funds within the European Union over the past few years.

Another major component of the work carried out by the TINA secretariat in close collaboration with the European countries concerned was the drafting of maps to establish a precise benchmark for the TINA network and to identify the location of projects. This mapping work proved to be of invaluable assistance in providing a coherent overall vision of problems, but it also revealed weaknesses in the design of individual projects once set against the coherent background provided by the maps. One of the central issues was whether project planning was sufficiently advanced to be able to make a sufficiently precise analysis of costs and flow allocation or to identify the local traffic flows they were likely to generate. From this standpoint, the exercise could not be fully completed and it was not possible to establish priorities for individual projects in accordance with the proposed guidelines. At the same time, it proved difficult to draw up detailed "geo-coded" maps showing the spatial location of projects, which in many cases reflected the fact that project planning was not sufficiently advanced.

Notwithstanding the above, as a result of this work priority corridors have become even more of a necessity in order to provide a firm foundation for the future development of European networks at the level of both the European Commission and the countries of Central Europe. At present, priority corridors take pride of place in most of national planning schemes of most Central European countries and it would be fair to say that many countries have adjusted their national plans on the basis of the priority corridors which have been identified and which have to a certain extent provided the template for new infrastructure planning and scheduling at the level of these countries.

The case of the Balkans area is also worth recalling at this stage in the shift from corridors to networks, even though, in this case, the chain of events has been extremely rapid.
The context at the end of the war in Yugoslavia was in fact that of the "Stability Pact". The war had *de facto* ruled out the participation of any of the countries involved in discussions regarding the future of European infrastructure for several years at a time when the first ideas about priority corridors were starting to be aired. On the cessation of hostilities this delay needed to be caught up but it was also necessary to consolidate a situation that remained precarious, two major reasons to act swiftly by implementing a transport and infrastructure policy which would guarantee the restoration and reinforcement of links between neighbouring countries that had recently been at war.

One of the first measures was therefore to announce the existence of a corridor X with branches to Bulgaria and Greece, a priority corridor endorsed at the Helsinki Conference and based on the main historical trade route through the former war zone.

However, shortly after the announcement of the planned route for corridor X (a process in which Greece was also directly concerned), the following stage was completed, namely the specification of a "strategic" network for the Balkans that was compatible with this corridor X and that represented an integral and major component of the Stability Pact.

This "strategic network" was drawn up by the European Commission in direct collaboration with the countries concerned. Alongside this initiative, the ECMT directed its energies towards evaluating the infrastructure projects in the area in partnership with the European Commission and the EIB (TIRS study), in accordance with the specification drawn up for the strategic network.

All of these initiatives were aimed at identifying a reasonable number of priority investments, given the available funding, in order to create a coherent system within the area.

The design of the "strategic" network itself was based on the relatively simple principles of creating links between capitals and major cities, in accordance with the major trade flows expected, which are notably those of corridor X with its connections to Hungary, Slovenia, Bulgaria, Greece, Albania and Romania. The first appraisal of the projects listed for individual countries, carried out using harmonised methodology, divided up the axes of the strategic network fairly easily while at the same time giving consideration to the details in order to satisfy the more specific expectations of countries. The TIRS study was extended by a second study (REBIS) aimed at working out investment schedules in greater detail.
2. From network to corridor

The conceptual shift from networks to corridors is also to be seen in policy implementation, although it is not possible to say whether one approach preceded or conversely is the outcome of the other.

Once network layout has been defined, corridors would appear to be an intermediate stage allowing progress to be made in analysing network complexity; this is the case in particular when intermodal services making use of several modal networks need to be introduced, when the national approach needs to be extended to the international sphere for which no "interoperable" harmonised network currently exists or when action is required from actors at different institutional levels because the network will involve too many partners in too great a number of interactions to be able to reach decisions.

This trend towards a progression from networks to corridors has already been noted in the past in Europe, notably during the initial planning stages of major international projects.

It has now re-emerged with a three-fold purpose:

- In terms of market regulation, to open up access to the network;
- In terms of choice of investment, to reinforce project prioritising procedures in order to improve the concentration of public funding, which will always be insufficient to meet all long-term requirements;
- Lastly, in terms of policy, to organise from 2004 onwards the new Trans-European transport networks, in accordance with EU Treaties, in order to meet the requirement to adopt a coherent approach at the level of an enlarged Europe in which corridors to the East must be matched by extensions to the West.

In the first instance we can take the example of the opening-up of rail networks and the first definition of "freeway". Freight freeways were designed to open up the network to new entrants with new rail operators running trains within corridors, particularly those leading to major European ports.

Given that the European Union has developed its own unique concept of separating infrastructure from operations, the opening-up of rail markets was not a straightforward process. At present, competition between freight operators is rapidly growing fiercer among rail freight operators.

The second and third instances correspond to the concerns of the Van Miert group charged with preparing for the planned revision of the development criteria (guidelines) for Trans-European networks o, 2004.

The issue at stake is an important one and consists in establishing sufficiently restrictive eligibility and selection criteria to ensure that the choice of priorities is compatible with the volume of public or private investment funding available.

In the past, this need to "select" had already seemed to be an insuperable problem for policy-makers. Once the Trans-European networks had been designed and a list drawn up of the infrastructure projects needed to construct those networks, it became clear that all these projects could not be financed by the reasonable horizon date of 2010; in consequence, an initial selection was made of so-called priority projects according to highly political criteria at the Essen Conference without establishing a formal selection procedure.

After several years, however, and with the 2010 deadline approaching, solely three of the projects agreed in Essen have been completed and many of the other projects selected will be far from ready in 2010; the direct progression from the Trans-European network concept to that of "priority" projects agreed on purely political grounds remains problematic.
These delays prompted the idea of returning to a corridor vision in which the linkage between infrastructure investment and implementation of a transport policy that is both overarching and more explicit can be readily perceived and the role of individual actors better understood.

The publication of the White Paper has restated European transport policy with the proposal of new infrastructure projects to complement the Essen projects.
Concept of corridors and networks – C. REYNAUD – NESTEAR
On the basis of this initial context, a two-fold approach driven by the corridor concept was adopted with a view to satisfying both:

- Economic development needs in international European relations;
- Political choices of projects as expressed at the European or national level.

The more economic or technical approach consists in selecting the main routes along which to develop international traffic within Europe, both passenger and freight, in order to focus attention on the principal trade flows or routes crossing a Europe enlarged to the East from congested areas with high traffic densities to more outlying areas that are harder to reach.

This approach must be a multimodal one in order to gain a better insight into the scope for transferring traffic onto less polluting modes, including short sea shipping.

The assignment of traffic flows to networks is an essential part of this exercise in order to establish sufficiently detailed maps of these principal routes; once again, drawing up maps is an invaluable aid to understanding the issues at stake and clarifying project discussions.

In selecting which of the so-called "candidate routes" to transform into priority corridors, an comprehensive array of different criteria has been used in the STAC design commissioned by the European Commission\(^8\) to forecast traffic flows and allocate them to specific routes as part of a process divided into the following major stages:

- Selection of the main routes for rail freight and then passenger traffic on the basis of traffic volumes;
- Selection of parallel routes for freight and passenger traffic by road, likewise on the basis of traffic volumes;
- Easing of volume criteria in "non central" and peripheral countries;
- Complementary analysis of connectivity along corridors and analysis of the technical compatibility of operating modes (notably the power supply and gauge constraints in the case of rail).

This resulted in identification of a set of 27 "candidate" routes, to which 4 shipping routes were subsequently added.

\(^8\) Publication of D1 (interim report) and D3 reports on the STAC study available on the website.
While the more political approach adopted undoubtedly took some account of economic considerations, its starting point consisted in projects with an international vocation presented by national representatives once their authorities had completed their own selection procedure at the national level. These projects generally met more or less formalised criteria of a socio-economic or political nature or criteria established at the international level as a result of agreements such as those reached in Essen or proposals put forward by the Commission after consultations with Member States. These projects can also be transcribed onto maps in order to place the emphasis on the continuity of the development work to be undertaken with a view to improving communications across Europe and to draw attention to missing links and excluded areas.

Narrowing the gap between these two approaches should therefore lead to the charting of priority corridors which are both economically and politically justified and within which priority can be given to specific projects. The corridor approach could thereby be used to refine the selection criteria, reflecting a balance between the requirements of international transport demand and the political desire to influence the geographical distribution of flows and balance in terms modal split.

This could be the sense of the approach recommended in the work of the Van Miert group with regard to the benefits to be gained from identifying priority corridors within the Trans-European network as part of a technical and political process.

To quote the report published by the Van Miert group, the aim was primarily to "federalise" priority projects along the main Pan-European routes.

The group made up of national representatives and representatives of the European Commission very rapidly agreed that one of the central criteria for the identification of the priority of a given project would be whether that project was part of one of the major trans-national routes identified on the basis of criteria regarding the crossing of natural barriers, the solution of congestion problems and construction of missing links.

Whatever the case may be, the ultimate aim of the exercise was clearly to put in place a more coherent planning procedure and to gradually harmonise the methods used to select and assess projects.

That being so, the group could not itself complete the work of developing a new methodology for identifying corridors within the prescribed time period; it therefore recommended that the Commission persevere with its efforts in that area in order to prepare for the planned revision of guidelines applicable to Trans-European networks.

In its recommendation, the group drew attention to the important need to draw up maps in which groups of projects would be clearly identified, given the fact that in earlier work the charting of the major routes or specification of network configuration had in many cases been relatively inaccurate, raising many questions over the precise location of routes and consequently the specification as such of projects designed to improve the flow of traffic along those routes.

The work of charting corridor routes on maps and assigning traffic flows must also take full account of maritime links and nodes. The access requirements of peripheral regions must also be represented given that because links had been analysis over longer distance they afforded greater scope for the combining of modes and choice of routing.
III THE NEW PAN-EUROPEAN DIMENSION CREATED BY THE OPENING UP OF THE MEDITERRANEAN

A balance had been struck at the Pan-European Conferences in Crete and Helsinki between the development of European networks and the selection of corridors (or PETRA) outside the European Union, with the aim of improving not only connections between Europe and neighbouring countries from Eastern Europe and the Mediterranean region but also links between those neighbouring countries themselves.

A further step forward was taken with the accession of new Member States to the European Union:

- The issue of relations with "new neighbours” to the East of an enlarged European Union was raised, as it was shortly after 1990 during preparations for the Crete Conference;
- To the South of the European Union, the opening-up to the Mediterranean region became a new priority with the planned creation of a free-trade area by the year 2010 in a context in which maritime and air transport modes need to be closely associated with land modes.

The first issue had hitherto attracted little attention even though the ten priority corridors extended beyond the territories of the new EU Member States into the Balkans region, following the conflict in Yugoslavia, and into Ukraine, Belarus and Russia. There is even the projected TRACEA corridor linking Europe to Central Asia.

While the second issue had clearly been addressed in the initial studies mentioned in earlier sections, these studies had not been supported by a mechanism for in-depth review or implementation of a genuine infrastructure policy as had been the case in the 1990s with priority corridors and the TINA process.

With regard to the opening-up of relations with countries located even further to the East, it is first worth recalling the scale on which trade with these countries, which have extremely high development potential in both economic and human terms, will ultimately develop. This trade will have a determining impact on traffic flows from the Baltic countries, Central Europe and the Balkans. Initial traffic forecasts clearly illustrate this potential with projected growth rates close to those applied to new EU accession States. Trade flows with new Member States and with new neighbouring countries to the East will have a significant impact on priority routes in Europe, particularly Central Europe.

The relevance of this comment is made all the greater by the fact that these new neighbours have no real access to maritime ports other than those on the Baltic and the Black Sea, if no account is taken of the Asian territories of the Russian Federation. Furthermore, the geography of the plain of Ukraine or Belarus, on the Eastern side of the Carpathians, readily lends itself to the establishment of major communication routes outside the European Union that would create new nodes linking up with the prolongation of European routes, as they have already done at several times in the history of Europe although, in this instance, it would be within a twentieth century context; a city such as Lvov, for example, could become a major trade hub outside the European Union.

In the case of links to the Mediterranean region, the Barcelona Declaration had given initial impetus to recognition of the importance of transport and transport infrastructure in a new Euro-Mediterranean policy; this led to the launching of a number of initiatives, notably in preparation for the Helsinki Conference as mentioned earlier in the paragraph describing the corridor approach adopted in the CORRIMED, INFRAMED and REDWEG studies. The scope of these studies, however, was often restricted to a specific part of the Mediterranean region or to a particular context such as the Middle East peace process.

At present, it would again seem in the Commission Communication to the Parliament on "the development of a Euro-Mediterranean transport network” issued in June 2003 that a new step forward is about to be
taken when the guidelines on trans-European networks are reviewed in preparation for their revision in 2004; the account taken of this parallel development attests to the importance attached to Mediterranean networks in the construction of European networks, a development that lies behind the commissioning of the MEDA-TENT project.

Two points of methodology set out in this Communication merit particular attention in that they offer the possibility of moving forward in the work of defining the main lines of direction for European and Mediterranean networks while at the same time taking due account of the distinctive characteristics of the Mediterranean basin. The first is to continue to give priority to corridor analysis in order to obtain a better ranking of priority projects, and the second is to incorporate short-sea shipping links into the Mediterranean network, including the motorways of the sea which are particularly appropriate in a region such as the Mediterranean basin.

Against this background, the Mediterranean region must also be considered as a whole by taking account of relations between the Western and Eastern Mediterranean areas, while at the same time conserving synergies at a more regional level where swifter progress can sometimes be made. This is particularly the case in the Western Mediterranean where the DESTIN project has been designed to put in place a common information and modelling tool for the assessment of priority projects, building on the work of the earlier INFRAMED projects completed a few years ago.

With regard to the corridor analysis of the Mediterranean region, there is no need to justify the interest in adopting such an approach that has already proved its relevance, as borne out in the recent report by K. Van Miert. The issue now at stake is to draw up a better formal definition of such corridors and to specify the criteria for establishing priorities, a task which the MEDA-TEN project is endeavouring to assist in, given that the official body in which national representatives express themselves in currently the Mediterranean Transport Commission which will not fail to address this new context.

The second issue is that of the "motorways of the sea", a concept whose application would principally lie in the Mediterranean region. This concept too deserves further refinement on the basis of past experience; it is not so much a theoretical as an operational approach towards meeting precise transport policy goals.

In the case of the motorway of the sea, one of these goals is also to promote alternative modes to transport to road.

In consequence, the motorways of the sea will first be assigned to the transport of unitary loads such as swap bodies, containers and above all trailers and tractors in what might be termed "sea-road intermodal transport".

A second major objective in the Mediterranean region is to ensure continuity with European networks and, beyond, to the major continents on Europe's borders. The Maghreb countries stress the need to extend such corridors towards Africa, while those of the Mashrek their extension towards the countries of the Middle East and the Arabian peninsula without restriction to coastal corridors.

Links with Europe through Turkey extend towards Central Asia, as had already been planned under the TRACECA project; the accession of the Caucasian countries to the ECMT simply enhances the interest of such projects in which efforts to facilitate the administrative requirements at border crossings and to

---

9 The MEDA-TENT project requires the representatives of Mediterranean countries (apart from the Balkan countries covered by the Stability Pact) to drawn up detailed specifications of the linkages between Trans-European and Mediterranean networks; it is co-ordinated by NESTEAR.
harmonise documents and standards cannot be dissociated from the costlier investment operations needed to ensure the success and profitability of projects.

After the Helsinki Conference, there was a need to provide a more precise definition of the significance of implementing "priority transport areas" (PETRA). The motorways of the sea, by ensuring the continuity of inland corridors, provide a more practical application of this PETRA concept for the purpose of policy implementation.

Nonetheless, the difficulty of defining "motorways of the sea" does not seem to have escaped the notice of either the European Commission, which organised a seminar on this topic in January 2003, or the authors of the Van Miert report who attempted to find practical solutions which would trigger the development of motorways of the sea.

Two approaches dominated this seminar in Brussels on the motorways of the sea:

- A first, more logistical approach to the problem in which the emphasis was placed on the quality of service in the maritime-inland shipping chain in order to European short sea shipping in general; such an approach lays the emphasis on the role of operators and on the market forces that will guarantee the development of motorways of the sea as a link in maritime logistical chains that have become more efficient;
- The second was a more strategic approach aimed at defining motorways of the sea as new priority links "priority maritime links" in the Trans-European network.

Obviously these two approaches are not conflicting in that they both seek to promote the efficient operation of logistic chains in the European short sea shipping market by seeking to integrate short sea shipping more fully into the overall European transport market, which has not always been the case before now, at the level of Europe as a whole where the opening up of maritime shipping has been a recent development.

However, the second approach does not focus solely on this general market for short sea shipping in that it places particular emphasis on those maritime routes that compete most directly with road routes; hence the integration of maritime links into the design of Trans-European networks in the first proposals put forward by the Van Miert group for priority motorways of the sea, two of which are located in the Mediterranean region.

It is a fact that experiences with maritime transport in Europe vary substantially from one area to another, according to whether one looks at experiences in the Baltic or in the Mediterranean. From this standpoint, the Baltic Sea is probably the area which at present offers the most accurate illustration of the form that motorways of the sea might take, with dense coverage of RoRo and ferry links in an overall network in maritime and inland links are closely interrelated. The historical maritime links between the Baltic ports and those on the coast of Germany and the Benelux countries strengthens the conviction that there is need for genuine "motorways of the sea" in the European transport system.

At present, however, the Mediterranean sea offers few examples of such an approach. The short sea shipping links offering an alternative to road transport primarily consist of domestic cabotage links on the Easter coast of Spain and along the Italian coast. Indeed, over the past twenty years these links appear to have suffered adversely from competition from road transport, notably with the development of the Spanish motorway network. International maritime links between France, Spain and Portugal, three of the countries of Southern Europe, remain limited even though distances by sea are much shorter than those by land even when account is taken of the growth in road congestion along the French, Italian, Spanish coasts as well as transit routes through the Alps and the Pyrenees.
Apart from services to islands, which are still largely provided by governments on the grounds of public service, the sole noteworthy and major exception is that of the Adriatic corridors and in particular the shipping links between Greece and Italy. Extremely efficient services have been put in place between Patras and Igoumenitza in Greece and Brindisi, Ancona, Venice and Trieste in Italy, and these services have proved to be highly competitive compared with road. Even though the war in Yugoslavia has accelerated the introduction of these services, the performances achieved in terms of frequency, speed and prices would seem to suggest that these lines will continue to exist even when the conditions for road haulage operations along the priority corridors in the Balkans, whether it be corridor X or other corridors through Romania and Hungary, have been improved; the conditions applicable to Alpine transit routes associated with maritime links will therefore have a role to play in the competition between corridors providing links to the major economic centres of Central Europe.

The concept of sea corridors is therefore crucial to the Mediterranean region not only because they are crucial factors in trade between European countries themselves, which now include the islands of Malta and Cyprus, but also because short sea shipping accounts for the lion's share of trade between the countries around the Mediterranean basin.

A European context that is favourable towards the development of maritime cabotage and that is likely to improve transit through ports or even to promote the introduction of new vessels must be allowed to benefit from all Mediterranean maritime feeder services.

In North-South trade flows between Europe and the Maghreb and East-West trade flows with the countries of the Middle East, the Mediterranean already has a rich history of the use of both conventional and Ro-Ro vessels, a maritime know-how of which we need to take full advantage in order to promote the creation of motorways of the sea in the Mediterranean region.

In terms of the introduction of these motorways, the Van Miert group has also opened up a number of avenues by stressing the pressing need to facilitate port operations and by considering the creation of facilities "dedicated" to motorways of the sea, as is the case when any new product is promoted.

Intergovernmental agreements can be signed to issue calls for tender for the creation of new services involving ports and maritime operators. One of the objectives of this would be to prevent competition between ports from derailing initiatives to introduce new services, even though this might be thought to be less of a risk in the Mediterranean than it is in the North Sea. Undoubtedly competition between ports for long-distance shipping services has in some cases diverted attention away from the pressing need for organised co-operation between ports in promoting maritime transport services over shorter distances using other techniques to meet different requirements. From this standpoint it is important to ensure that the current success of the Mediterranean region in creating major distribution hubs for intercontinental container traffic does not overshadow the opportunities for providing maritime services for trade flows between the Mediterranean countries themselves, if necessary by combining "feeder" services (services relating to intercontinental traffic) with services between countries.

With regard to the interlinking of corridors within the Mediterranean region, priority might be given to several different types of link: North-South links with the European Union, East-West links or South-South links between non-European countries, as well as links to other continents reflecting the role of crossroads played by the Mediterranean region in terms of world trade. As well as the individual synergies that appear at the sub-regional level, links between the Western and Eastern sides of the Mediterranean need to be strengthened.
In this respect, the CORRIMED, INFRAMED and REDWEG projects have been seen to provide an initial basis that needs to be built upon by drawing up specifications for maritime routes. Two of these have already been proposed in the Van Miert report as priority motorways of the sea for Trans-European networks. To these need to be added those linking countries on the Northern seaboard to those on the Southern seaboard, across the Mediterranean Sea, as extensions to the major international priority routes structuring the territories of Spain, France, Italy and Greece and terminating at the port facades of those countries.

The planning of services between countries on the southern Mediterranean seaboard must be based on the discussions that have already taken place under existing regional co-operation programmes which have sometimes included the participation of countries from neighbouring continents. In the case of the Maghreb, for example, discussions on infrastructure in the Arab Maghreb Union (UMA) are also part of the larger framework of trade links with other African countries. Discussions on the Middle East increasingly refer to services deeper inland towards non-seaboard countries, as in the case of links through Turkey towards Central Asia.

In the MEDA-TENT project, an initial analysis was made of the current performance levels of transport chains in the Mediterranean within what have been termed “demonstration” corridors; these are the major existing trade routes for which transport services exist and which can provide a basis for an initial evaluation of needs and performances, without prejudging at this stage whether or not such routes should be given priority.

It would therefore be possible to put forward initial proposals for priority corridors in the Mediterranean region to allow discussions on priority corridors in Europe to proceed in tandem. The aim is to achieve the greatest degree of synergy possible in the specification of interconnections between networks, to facilitate interoperability in the operation of networks, and lastly to permit the pooling of evaluation methods that is often a prerequisite for any co-operative initiative.

In conclusion, experience clearly shows that there is no conflict whatsoever between the network and corridor concepts. On the contrary, they are mutually beneficial. It has often been the political and institutional context that has led to one approach being preferred to the other. From this standpoint, the corridor concept in probably easier to impose in cases where the level of co-operation and integration between countries is less advanced. However, this may simply be the general rule in that the choice of new prioritising criteria for selecting projects can also prompt planners to return to the corridor concept in cases where the nature of the networks has already been recognised at the international level, as it has been within the European Union. An example of this may be seen in the recent work of the Van Miert group.

There is no conflict in methodological terms either. The basic question is to determine at what level to place the analysis. The transport system has become increasingly complex with the introduction of intermodal chains and the emphasis placed on the conditions under which infrastructure is operated and used. Projects can no longer evaluated and aid provided to decision-makers without reference to the interplay between actors and the various institutional levels involved in the decision-making process and in many cases the co-financing of projects according to individual priorities. From this standpoint, the corridor concept can compensate for this increasing complexity by restricting the scope of the analysis.

The current context is one of a new stage in the opening-up of European networks to new neighbouring countries and the Mediterranean; it will undoubtedly be necessary to have recourse once again to the corridor concept followed by that of networks in order to distinguish new priorities by benefiting to the greatest extent possible from past experiences with co-operation.