EU Common Transport Policy: Trans-European Networks

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1. Introduction

The European Community has been founded in 1957 when the Treaty of Rome was signed by the six founder countries: France, Germany, Italy, the Netherlands, Belgium and Luxembourg. Nine additional countries have accessed the European Community until 1995 as there are the United Kingdom, Denmark, Ireland, Spain, Portugal, Greece, Finland, Sweden and Austria. This means that practically all West European countries except for Switzerland and Norway are members of the Community. In the year 1994 the European Community was renamed into the European Union when the Treaty of Maastricht was signed by the 15 member countries.

In the year 1990 the Portuguese presidency came out with the proposal to establish a European infrastructure agency to coordinate the national plans and make the network infrastructures interoperable. The European Commission elaborated a report entitled “Towards Trans-European Networks” which included a concept for a European high-speed rail network. The basic concept for this European rail network plan had been provided by the UIC (Union Internationale des Chemins de fer; The International Railway Association). The “big four” countries (U.K., France, Germany, Italy) did not appreciate this political motion too much because they suspected that it could reduce their planning autonomy. Therefore the concept of a European infrastructure agency has been abolished soon.

But the idea, the name and last not least the logo of Trans-European Networks (TEN) had such a strong appeal in Europe that the “TEN” kept alive and a variety of additional networks followed on the track of the first approach which were also called “Trans-European”. In the following the TEN were even extended to other sectors, namely the communication and energy infrastructures have been placed under the TEN umbrellas. The result of this political process has been manifested in the Maastricht Treaty, article 129: “The community is committed to establish guidelines, in which the objectives, the priorities and the basic activities for the development of Trans-European Networks are summarized; the guidelines will also comprise projects of common European interest”.

In July 1996 the European Parliament and the European Council have published common guidelines for the development of TEN. This means that for the first time in the history of the European Union there exists a framework for national transportation planning which sets a future vision and priorities for the development of a common transport infrastructure in the Union. The old planning system, which was based on purely national objectives, had suffered from the following weaknesses:
insufficient development of international corridors,
bottlenecks and missing infrastructure links in border regions,
missing compatibility and interoperability in particular in rail transport, and
coordination problems and financial bottlenecks.

The basic requirements manifested in article 1 of the guidelines are:

- the interoperability of the Trans-European transport networks, and
- the compatibility and standardization, in particular for the telematic systems.

Interoperability means that the provision of the infrastructure allows for activities of many operators regardless of their territorial origin. In road transport this is widely guaranteed as vehicle technology and traffic regulations are internationally coordinated (one of the major exceptions from this rule is the left side driving practise in the UK). In rail traffic however there are substantial shortcomings with respect to interoperability. The European railway companies operate with five different power supply systems, two standard gauges (if the German Maglev would be realized this would mean the establishment of a third standard gauge) and different standards for the maximum height of vehicles in tunnels (the UK-standards differs from the UIC-standards). Furthermore there are totally different technical standards for vehicles as well as for signalling and operation control systems, and last but not least different organizational structures associated with different operation rules which lead to very heterogeneous operation and service conditions.

In European air traffic there were similar problems on the field of air traffic control. There existed some 20 European control centres which were operating with different software making the guidance of aircraft from the origin to the destination airport complicated and costly. In the meantime the problems have been gradually removed by increasing the central responsibility of EuroControl. The air traffic control systems have been developed further such that the capacity for controlling aircraft movements has been substantially increased. Nevertheless bottlenecks showed up again in the years 2000 and 2001 which temporarily vanished after the 11th of September 2001.

2. The Present State and Further Development of the TEN

Presently the Trans-European transport network consists of nine components:

- road network,
- rail network,
- inland waterway network and inland ports,
- maritime ports,
- airports,
- network for combined transport,
- management and information network for maritime transport,
- air traffic management network,
- satellite positioning and navigation network.
In the White Paper of September 2001 the Commission have stated that despite the successful opening-up of the transport market over the last ten years, the fact remains that completion of the internal market makes it difficult to accept distortion of competition resulting from lack of fiscal and social harmonization. The fact that there has been no harmonious development of the common market transport policy is a reason for current headaches such as:

- Unequal growth of different modes of transport;
- The environmentally more friendly transport modes are declining while the modes which produce high ecological risk are increasing. For instance road now makes up 45 per cent of the goods transport market compared with 41 per cent for short-sea shipping, 8 per cent for rail and 4 per cent for inland waterways. The predominance of road is even more marked in passenger transport, road accounting for 79 per cent of the market, while air with 5 per cent is about to overtake railways, which have reached a sealing of 6 per cent;
- Congestion on the main road and rails routes, in towns and at airports;
- Harmful effects on the environment and public health and of course the heavy social impacts from road accidents (about 40,000 fatalities per year).

Before the background of these observations the Commission are fostering the idea of the development of the TEN again. The fact is, however, that until now only 1/5 of the infrastructure projects have so far been carried out. Some major projects have been completed such as Malpensa Airport, the high-speed train from Brussels to Marseilles, and the Oeresund bridge-tunnel linking Denmark and Sweden. The main reason for the low base of development is the lack of public and private capital, which the Commission tries to overcome by innovative policies on infrastructure charging/funding. Therefore the Commission has decided to extend their funding up to 20 per cent of the investment costs of a project and to make use of other funding instruments such as the cohesion fund and the structure development fund if possible. In addition to that the European Investment Bank, which is fully owned by the member states, is expected to increase their potential to offer loans to the investors. Finally, private involvement should be fostered.

3. The Pan-European and TINA Networks

The European Council has started the negotiations with Poland, the Czech Republic, Hungary, Slovenia, Estonia and Cyprus at the 30th March 1998. In December 1999 it was decided to extend the scope of accession candidates by six additional countries (Rumania, Bulgaria, Slovak Republic, Lithuania, Latvia, Malta). As Turkey is already an associated member of the European Union the set of potential candidate countries for accession comprises altogether 13 countries. The negotiations with the six first mentioned candidates have shown a fast progress and in particular with respect to the legal adjustments a wide agreement has been achieved.
The legal position of the European Union is that the accession countries have to adapt the achievements made in the process of forming the European Community (Aquis Communautaire). Because of the different stages of economic development in some cases accession countries insist on introducing a transition period for adjustment and in other cases some EU-member countries, in particular Germany and Austria, insist on transition rules to avoid a major disturbance on their freight transport markets. These countries fear an extensive import of cheap labour-force from accession countries to their markets, which are already suffering from high unemployment. Furthermore they expect “social dumping practices” in accession countries, which might even extend the differences of labour costs. As the so-called cabotage (activities of foreign companies in domestic markets) has been introduced in the EU-transport market in 1998 low-cost operators from accession countries would have good chance to penetrate the transport markets of the neighbour countries.

After the abrupt political changes in the countries of Central and Eastern Europe the transport markets showed a substantial decline, which was caused by the economic restructuring and shrinking economy. Only the car-ownership and motorized individual traffic showed an immediate upturn, which has continued in the following decade. The road freight traffic has overcome its decline by the mid of 90ies. Rail traffic, however, has decreased dramatically. While passenger transport has lost about 50 per cent of its volume, goods traffic even more. What concerns the future development of transport in the accession countries a large study of North-East Asia, INRETS and IWW (1999) has provided a database for political decision-making. The forecast is based on an integrated system’s approach including socio-economic, infrastructure and market development which are put together in a consistent scenario forecast. The scenarios constructed comprise

- a low development scenario (A)
- a medium development scenario with different combination of economic development and infrastructure provision (B, C, D)
- high expectation scenario for economic, infrastructure, development and liberalization on transport market according to the best European standard (E).

In passenger transport the growth of road transport will be by far higher than that of rail transport, which in some CEC countries will even lose market share. While in the densely populated areas rail traffic will grow slightly a substantial decline of rail traffic in the rural areas will be inevitable. Only on boarder crossing and long distance relationships railway transport will have the chance to develop according to the highly growing traffic demand. Nevertheless air traffic will be by far the fastest developing traffic mode in passenger transport, followed by car traffic.

Freight transport will show a modest growth in the domestic transport segment while transport for exporting or importing goods will increase most dynamically with growth rates much higher than that of the social product. What concerns the development of the different transport modes on the freight transport market, North-East Asia, INRETS and IWW (1999) argue that the chances for the environmentally more friendly modes like rail and inland waterways do not look very prosperous. The higher the economic growth
and the closer the transport market conditions come to the West-European situation the worse will be the chances for rail and inland waterways. The forecast takes into account the expected structural effects on the goods markets and the changes of logistic structures which have to be expected dependent on economic development.

The European Commission have expressed hope in the White Paper of 2001 that the market share of the railways in the accession countries could be stabilized in an order of magnitude of 35 per cent or 40 per cent. 60 measures, described in their action programme, are intended to change the market conditions in a way that shippers would prefer railways and inland waterways the main transport relationships. The study of North-East Asia, INRETS and IWW (1999) shows that this hope only can come true if either the economic growth, accompanied by an associate infrastructure provision for roads would be low or the measures of the action programme would have to be very restrictive with respect to further growth of road freight transport. If both assumptions do not come true then the market share of railways will most probably fall significantly under the level of 30 per cent, in several countries even below 20 per cent.

1. Pan-European Corridors and the TINA Network

In the years 1994 so-called Pan-European transport conferences have been held in Crete and in Helsinki. The outcome was altogether 10 traffic corridors between West, Central and East Europe, which extend the network of the Trans-European infrastructure. In the year 1995 a common initiative for analysing the needs of future transport infrastructure in the accession countries has been started which was named the “Transport Infrastructure Needs Assessment” (TINA). The TINA-transport infrastructure network includes the “Helsinki-corridors” which have been defined in 1997. It consists of a backbone network and an extended network which complements the functionality of the backbone. In Table 1 the activities for proving the TINA infrastructure networks are listed. Figures 14 and 15 depict the TINA road and rail networks.

Table AIII-1  TINA networks and investment volumes

<table>
<thead>
<tr>
<th>Network Type</th>
<th>Investment Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>18,683 km roads</td>
<td>44.3 Bill. Euro</td>
</tr>
<tr>
<td>20,924 km railways</td>
<td>37.1 Bill. Euro</td>
</tr>
<tr>
<td>4,052 km inland waterways</td>
<td>1.5 Bill. Euro</td>
</tr>
<tr>
<td>40 airports</td>
<td>4.4 Bill. Euro</td>
</tr>
<tr>
<td>20 seaports</td>
<td>2.9 Bill. Euro</td>
</tr>
<tr>
<td>58 inland ports</td>
<td>0.3 Bill. Euro</td>
</tr>
<tr>
<td>86 terminals</td>
<td>1.0 Bill. Euro</td>
</tr>
<tr>
<td>Sum Total</td>
<td>91.5 Bill. Euro</td>
</tr>
</tbody>
</table>

Altogether a sum of about 92 Billion.Euro will be needed to realize the TINA backbone network in the time between 1998 and 2015. This implies that the accession countries should invest about 1.5 per cent of their social product for the development of the long-distance transport networks. If one compares this challenge with the present
situation in the West-European countries, which on the average invest much less than 1 per cent of their Gross Domestic Product into the transport networks, then the challenge for the accession countries seems to be very or even too high. Until now the subsidies which are given from the EU to the accession countries are rather modest. The EU Commission has established a funding instrument called ISPA-Fund (Financial Instrument for Structural Policy Assistance for Accession), which is equipped with 1 Billion Euro per year of which 50 per cent can be spent on transport. Other sources of funding are the World Bank, the EBRD (European Bank for Reconstruction and Development) or the EIB (European Investment Bank), which has spent already more than 4 Bill. Euro as loans for transport investment projects in CEEC.

Evidently it is comparatively easy to establish private-public partnerships for the building of airports and motorways with high traffic density. Projects like railway rehabilitation or improvement of inland waterways show a much lower rate of profitability and will have problems to be financed in the next years. Therefore the German Scientific Advisory Council of the Ministry of Transport has suggested transfer a part of the cohesion fund to the ISPA-Fund to support the development of environmentally more friendly modes in the CEEC in the next future.

4. Extension of TEN and TINA Towards East Europe and East Asia

Trade between Europe and Asia is dynamically developing. Presently the trade volume is annually estimated 500-600 bill. USS. The major part of the goods exchange is carried by maritime transport, which in the first instance uses the route through the Mediterranean and the Suez Canal. As the sea transport takes about 30 to 35 days of time alternative land-borne transport corridors are considered again. The Trans-Siberian route from Berlin via Warsaw, Minsk, and Moscow to Vladivostok would reduce the transport time to 12-15 days and thus improve logistic efficiency as well as save costs. But this railway route presently carries only 1 per cent of the trade volume between Europe and Asia.

In the year 2000 about 40,000 containers have been shipped alongside this corridor, which uses only 25 per cent of the existing capacity. One of the reasons for this substantial under-use of the carrying capacity of the Trans-Siberian route is the low quality of service and the missing reliability. The latter stems from missing investments in the infrastructure and in modern information technology for better train control. A second reason is the tariff system for containers, which is still not unified and rather complex. A third reason is the high cost of freight trans-shipment at the Russian seaport of Vostochny. The fees are twice the fees of the Korean seaport Busan or of the Chinese seaport Shanghai. The Ministry of Transport in Moscow is well aware of these shortcomings and currently working out a concept for a unified service with a one-stop shop for the Russian part of the route. This is a pre-condition for making their ground transport facilities more attractive for international shipping on the East-West route.

Before the background of the uncertain future of the Trans-Siberian alternative railway routes could gain importance, which link China/Korea to Central Asia, Turkey and Europe, at least partly circumventing the Russian Federation. Also the Fraseka-corridor,
which links Central Asia to Europe through passing the Caucasus Mountains, could be developed. Facing the potential competition the Russian government is also considering a combination of Russian and Central Asian links. A communiqué has been formulated on the occasion of the visit of President Putin to Korea on February 27, 2001. The parties shared the opinion that the positive developments of the intra-Korean relationships have created a good atmosphere for cooperative projects under participation of the Republic of Korea, the Russian Federation and other states. Examples are the projects in the areas of energy and resources, the interconnection of Trans-Korean railways (TKR) and the Trans-Siberian Railways (TSR).

It is well known that there is still a most important link missing between the Russian, Chinese and Korean railways. There might be a chance that Democratic People’s Republic of Korea will agree to close the existing gaps in the railway network subject to sufficient financial aid from third parties. Japan seems to be interested in taking the lead for solving the financial problems with the necessary investments in Democratic People’s Republic of Korea.

5. Conclusions

From the developments of the TEN, TINA and East-Asian networks one can draw some powerful conclusions: The TENs are a most important element of West-European integration and the development of a single market without borders for people, goods & services, capital and communication. Therefore they have been integrated explicitly in the Treaty of Maastricht 1994, which cleared the path for the EU with 15 member countries. The TINA networks are a necessary condition for extending the EU to countries of Central and South-East Europe. They will create the base for a new economic upturn and a peaceful social integration of countries with very different history, ethnical roots and economic performance. The Trans-Korean networks and their interconnection with Chinese and Russian (Trans-Siberian) networks are not only an issue for saving transport cost and time. They also can lead to a re-establishment of economic relationships and a revitalization of social communication. One can not forecast the speed on the end of political processes. From the German experience one can learn that sometimes these processes go unexpectedly fast.

The East-Asian network can be linked efficiently to Central-Asian and Russian networks. This will create the bridge to the Pan- and Trans-European networks. Of course one can question the huge investments that will be necessary to build up a Trans-Europe-East Asian network. The major part of good will in the future still be shipped on maritime routes and most of the passenger trips on longer distances will be carried by aircraft. Landborne transport networks, however, have a much more intensive integration effect, which fosters economic activity and trade as well as develops the networks of social relationships. Transport scientists are at the forefront of thinking about new networks and developing scenarios on the manifold activities, which can be induced through a proper design of the transport infrastructure. Therefore it is most important that the national and international transport societies come closer together at the benefit of the economy and the citizens. The organization of the 9th World Conference on Transport Research in July 2001 has been a big success and has shed bright light on the scientific and management performance of
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Korean transport research organizations. This gives a strong platform for future integrated research activities and a successful common work in the international organizations of transportation science.