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Colin Turner*

Trans-European Networks: The White Paper and Beyond

The desire to enhance the gains from the internal market programme has led the European Union (EU) to emphasize the importance of the development of a coherent set of infrastructure networks in the telecommunication, transport and energy sectors. What steps must be taken to realise such trans-European networks? How can the massive financing problems be overcome?

Over decades the EU member states have neglected the enhancement of, and investment in, infrastructure and this is now being seen as an impediment to the competitiveness and integration of the EU. The Treaty upon European Union and the recent White Paper upon Growth, Competitiveness and Employment¹, by raising the profile of trans-European networks (TENs) as an important area of EU policy, have underlined these concerns. Indeed in the context of the perceived challenges facing the European economy, the development of TENs has taken on a newer and greater importance that has led the establishment of these infrastructures to be one of the Commissions "big ideas" for the evolution of European economic integration and transformation into the twenty-first century.

In practical terms the aim of the TENs programme is to develop a comprehensive infrastructure system that will eventually reach all points of the European economic space. At the heart of this plan is the desire to interconnect, to develop more extensively and to use more rationally Europe's infrastructure networks, thereby facilitating the easier movement of trade and factor flows between the EU states. One of the key factors in the achievement of TENs is that national infrastructures should effectively be "Europeanised". That is, member states' infrastructure networks should be seen as a part of an overall European network. Therefore they should evolve to stress the needs of the economic area as a whole, not just the interests of the member state, reflecting that national infrastructure developments can, and do, have spillover effects.

The problem of Europe's infrastructure networks is that they have not evolved to reflect the changing economic life of the continent. A major cause of this is that member states remain largely parochial in their infrastructure

planning.² However, as the nature of economic life in the EU changes, so do the demands placed upon its infrastructure. As interaction between economic operators increases, one would expect, indeed need, these associations to be enhanced by the establishment of a set of complementary networks. Over the medium to longer term it may well be that the establishment of these networks fosters deeper integration and thus has a powerful effect on the re-organisation of political, social and economic relations within the EU.³

The recent attention given to the development of TENs has to be set within the context of the objective of the White Paper upon Growth, Competitiveness and Employment in establishing a pan-European growth strategy. It is felt that the establishment of TENs would facilitate a more competitive EU by, firstly, allowing the economy of the area to function in a more efficient and effective manner thus aiding the better allocation of resources and, secondly, helping to achieve a reduction in the cost of network services to EU firms. It is felt that these TENs, by promoting the common, longer term, EU concerns of easier trade and factor flows, would curtail the temptation by member states to undermine European economic co-operation by adopting beggar-thy-neighbour policies. It is therefore important, if the TENs programme is to be a success, that the EU emphasize the mutual benefits of their formation over the gains to be had from a member state's acting unilaterally.

¹ Cf. Commission of the European Communities: White Paper upon Growth, Competitiveness and Employment: the Challenges and Way Forward into the 21st century, COM(93)700, Brussels 1993.

² Cf. R. Magi, I. Masser and P. Nijkamp: Missing Networks in European Transport and Communication, in: Transport Reviews, 1992, Vol. 12, No. 4, pp. 311-321.

³ A. Bressand and K. Nicolaidis: Regional Integration in a Network World Economy, in: W. Wallace: The Dynamics of European Integration, Pinter/RIIA, 1990, pp. 27-49.

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The strategy for the attainment of TENs requires that a number of different issues be addressed if the programme is to be fully realised. These are:

- *the liberalisation of network services and infrastructure provision*; network services should be as freely tradable as any other good or service,
- *the physical interconnection of national networks*; to aid mobility, national networks should be physically integrated,
- *ensuring network interoperability*; networks and the services they offer have to be technically compatible, and
- *the removal of bottlenecks*; removing those points in the network where congestion acts as an impediment to trade.

It is envisaged, due largely to public sector budgetary constraints, that the movement towards TENs in the EU should be a largely market-led process where the private sector would start to take a more pivotal role in the provision of infrastructure. In such a situation, infrastructure would be almost solely developed upon commercial criteria. Therefore the role of the respective public authorities is to be more passive by ensuring that the environment is right for private sector finance to be forthcoming. The White Paper's agenda is therefore about initiating a strategy to complement the market-based provision of infrastructure.

Regulatory Environment

A key complement to the development of infrastructure along these lines is an appropriate regulatory environment that allows economic operators to function without too many costly commitments and regulatory hurdles. However, even if this is favourable, there are still massive barriers to the potential involvement of the commercial

sector in infrastructure provision. The level of resources needed, the risk involved, the long pay-back periods, the sunk costs immersed in the project and market inexperience in financing projects of this nature are all barriers to the involvement of commercial enterprises. The regulatory environment has to reflect such risks by recognising that cooperation between enterprises is perhaps the only way to overcome such impediments. However it is feared that such cooperation could reduce the benefits of liberalisation. Therefore in the development of TENs, competition policy has to lay down clear parameters where such cooperation promotes integration without necessarily endangering the liberalisation process. If agreements do not perceptibly increase barriers to entry they should not be seen as a threat to the liberalisation process.

It is apparent that, within the EU, an embryonic set of TENs is evolving. The key issue is the speed of development of a truly comprehensive set of TENs. If left to the commercial environment alone, it is likely that TENs would evolve in a piecemeal fashion. Additionally the other motives for the development of TENs, such as regional and public service concerns, may play a very poor second to commercial considerations. It is the EU's policy that commercial viability has to be a major consideration in the establishment of TENs. This is unlikely to be compatible, however, with the comprehensive development of TENs as infrastructure projects inevitably vary markedly in their commercial viability. There is a clear need, in the EU, to reconcile the notion of infrastructure as a "common resource" with the need for private sector provision. This combined with the sheer cost of developing these infrastructure systems has led the Commission to pursue a number of schemes to aid the development of TENs by seeking, both directly and indirectly, to assist their realisation via the market process.

Hans Mayrzedt

Handelsungleichgewichte mit Japan am Beispiel der Automobilindustrie

Erklärungsansätze und Zukunftsperspektiven

Worsening trade disputes with Japan have given rise to a growing interest in the underlying problems involved. Does Japan have special advantages over its foreign competitors? If so, can they catch up? Or are the conditions governing international trade being distorted so as to favour Japan? The author tracks developments relating to these questions, examining, in particular, the general trade imbalances with Japan and the unbalanced character of international trade in automobiles. He analyses development of the shares relating to production and sales. He highlights weaknesses in the German automobile industry, which has become complacent with success, as regards productivity and wage costs, and he explains the strong international market position of Japanese companies in the automobile industry as compared with their competitors in other countries. By way of conclusion, some ideas for overcoming the structural crisis are presented. The book is published in German. It is intended for the general reader interested in current foreign economic questions and will also be of particular interest to companies and firms in the automobile industry.

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Strategic Programme

The above has highlighted the concerns and issues that the EU needs to address if the TENs programme is to be realised. Therefore there are clear policy dilemmas that the EU faces in the move towards the attainment of TENs. It is these the White Paper seeks to overcome. Perhaps the biggest of its challenges is to ensure that sufficient private finance would be forthcoming to allow the establishment of a comprehensive set of TENs. To this end, the EU seeks to act as a catalyst for the development of TENs by seeking to prioritise, identify and develop a strategy for their attainment.

In its broadest sense, the function of the White Paper was to develop a strategic programme to stimulate the

Table 1
Transport Networks

	Investment (ECU billion)
Rail Links	
Brenner Link	10
High Speed Rail Link (London/Paris/ Brussels/Cologne/Amsterdam)	8.5
High Speed Rail Link (Madrid/Barcelona/ Perpignan)	6.8
Fehmarn Belt (Germany/Denmark)	4.5
Eastern High Speed Rail Link (Paris/ Strasbourg/Berlin)	12.5
Rotterdam/Karlsruhe/Italy	3.1
High Speed Rail Link (Lyons/Turin)	6.2
Urban Combined Transport Links	2.3
Total	53.9
Road Links	
Nuremberg/Prague	1
Berlin/Warsaw/Moscow	3.2
Athens/Thessaloniki/Sofia	2.5
Lisbon/Valladolid/France	2
Dublin/Birmingham/Cambridge	1
Bari/Brindisi/Otrante	1
Road Traffic Management	1
Total	11.7
Air Links	
Athens Airport	2
Air Traffic Control	8
Total	10
Inland Waterway Links	
Rhine/Rhone	2.5
Seine/Schelde/Meuse	1.5
Elbe/Oder	0.6
Main/Danube	0.4
Total	5
Sea Links	
Maritime Traffic Management	1
All Modes	
Air/Land/Sea/Satellite system	1

Source: EU.

development of TENs within the broad themes of European economic transformation and adjustment.⁴ The essence of the EU's strategy in the White Paper was to encourage a broader perspective in infrastructure development and in setting the right regulatory environment, and to offer a number of incentives to ensure the TENs would emerge from the commercial sector. The TENs programme was one of a number of measures to aid the EU's micro-economy, thus assisting its drive towards competitiveness and growth as precursors to permanently higher levels of employment. Whilst most member states would agree on the need for the development of TENs and that the private sector should be the main developer, there is, however, disagreement on the role supranational authorities should play in their development. Thus there is a debate on whether the EU should have an active or a passive role in the development of TENs. However, the EU, by prioritising projects and offering political and – albeit limited – economic support to priority projects, has started to establish a role for itself.

The White Paper is part of the adjustment of the EU to the changing global competitive environment based upon the outlook that the best way to respond to these challenges is for the EU to operate as an even more closely integrated unit. Therefore it is important to stress that the TENs programme is not a late twentieth century "New Deal"; it is a longer term strategy about making markets work more effectively as a basis for a more competitive and growing EU economy.

The White Paper set out in fairly concrete terms the moves towards TENs within the framework of an overall strategy for each of the sectors. The following is a brief outline of its conclusions on each of them.

Transport

The major barrier to the attainment of TENs within this sector is the level of financing required. The EU estimates that, by the turn of the century, it will need ECU 220 billion invested in its transport infrastructure. This problem is compounded by the fact that the private sector has little experience of involvement in the financing of infrastructure in this sector, and, where it has been involved, it has frequently run into problems; the Channel Tunnel is an obvious example. One way to possibly overcome this hurdle is to encourage public and private sector cooperation. Towards attaining these ends the EU has prioritised a number of projects (cf. Table 1).

⁴ For an excellent analysis of the White Paper cf. The House of Lords Report by the Select Committee upon The European Communities entitled "Growth, Competitiveness and Employment in the EC", Session 1993-94, 7th report, HL paper 43.

Energy

The development of a set of coherent TENs within this sector is linked directly to the attainment of the Internal Energy Market. The EU hopes that such measures will promote the more rational use of the Community's energy resources, thus reducing its cost to economic operators. The problem of finance is not as acute as in the transport sector as the development of infrastructure on commercial lines has already proved feasible. However, not all of the priority projects are currently commercially feasible, so that there may be a need for some form of public sector assistance. It is estimated, by the EU, that some ECU 30 billion still needs to be spent on energy infrastructure by 1999. The key issue is to remove administrative burdens that prohibit the formation of a coherent set of infrastructures. To secure this objective the EU has established a number of priority concerns in the gas and electricity sectors to be addressed in the move towards the attainment of TENs in energy (cf. Table 2).

Telecommunications

The establishment of TENs within this sector is linked into the development of the Common Information Area. The aim of this programme is to ensure that information is freely mobile around the EU thus complementing mobility on a broader scale. The EU estimates that the development of TENs in telecommunications will cost something in the region of ECU 150 billion, the majority of the funding of which the Commission expects to come from the private sector. It is apparent that the development of TENs in this sector is crucial to the overall cohesion and advancement of the area, enabling the EU to compete with other technologically progressive countries. In this sector it is perceived that the biggest barrier is neither financial nor technical but one of attitude: if the establishment of TENs in this sector is to be a success then there has to be a wider recognition of the importance of information and

Table 2
Energy Networks

Electricity
Connection of isolated electricity grids
Improvement of interconnections between member states
Improvement of electricity networks within member states or with non-Community countries
Creation or improvement of electricity interconnections with non-Community countries
Gas
Introduction of natural gas in new regions
Connection of isolated or separate gas networks
Improvement of reception capacities/LNG storage and underground storage
New gas supply pipelines

Source: EU.

communication technologies (ICTs) for the development of the European economy. The EU will be a catalyst for their advancement by acting, together with both producers and consumers, to identify where there are clearly problems in the EU's telecommunications networks. In the light of this, the EU has proposed a number of initiatives within this sector (cf. Table 3).

To start to address the challenges set out in the White Paper the EU has mandated three groups to examine feasibility and priorities in the attainment of TENs. The Ecofin Council (the finance ministers of the member states) will examine the financing of TENs. It essentially deals with the politically sensitive themes and issues surrounding the financing of these infrastructure developments and will obviously, given its representatives, be the major actor in deciding the extent to which TENs will develop as the members of the council will control the level of finance available from the public sector. The financial power that Ecofin has means that it will play a powerful role in the prioritising of projects, in establishing general rules for EU finance and in setting the development of TENs within an overall macro-economic context.

The Christopherson group (named after the economics commissioner), which comprises the personal representatives of the respective heads of state, will look at the development of TENs in the areas of energy and transport. It has a clear function to use its limited resources as fully and effectively as possible towards the longer term objectives of the TENs programme by, for example, encouraging private/public sector cooperation for priority projects. Such a strategy is especially important in the light

Table 3
Trans-European Telecommunications Networks

Information Highways	Target Area for Strategic Projects	Investment Required (ECU billion)
Interconnected advanced networks	- establishment of high speed communication network	20
	- consolidation of ISDN	15
General electronic services	- electronic access to information	1
	- electronic mail	1
	- electronic images: interactive video services	10
Telematic applications	- teleworking	3
	- links between administrations	7
	- teletraining	3
	- telemedicine	7
Total:		67

Source: EU.

of the perceived reluctance of commercial enterprises to be fully involved in the development of TENs. In practical terms its function is to examine the realistic moves towards TENs in the terms of the objectives laid out in the White Paper. Once the Group has reported it is up to the Council to sanction the actions proposed by the group.

The Bangemann group (named after the industry commissioner) will examine the development of TENs in telecommunications and the evolution of the information highway. The members of this group are representatives of the industry, users and consumers. The need to establish TENs within this sector raises differing problems from those faced in the other sectors. Within telecommunications there already is a great deal of investment by enterprises in infrastructure. Therefore the function of this group is not to seek ways of raising capital but to develop an environment in which this funding can occur. This also has to ensure that the benefits of the investment in telecommunications infrastructure and associated services infiltrate all levels of the economy and society. Therefore the Bangemann group has a broad remit to seek the promotion and the spread of ICTs to aid the development of the "information society".

The Financing of TENs

The cost of the developing TENS is clearly going to be the biggest obstacle to the realisation of the programme. It is estimated, by the Commission, that the development of these TENs requires investment of somewhere in the region of ECU 400 billion by the turn of the century including ECU 162 billion for the priority projects. The problems of finance are not uniform across the sectors, however. It is already apparent that commercial investment in infrastructure has already occurred in both the telecommunication and energy sectors. Therefore the EU's efforts at developing TENs in these sectors would, to an extent, be merely complementing the investment that is already occurring and ensuring that the priority projects attain sufficient funding. One of the key roles for the EU is to put into place the right regulatory environment in these sectors to facilitate such investment.

The Commission believes it is not the shortage of funds that is the problem but the small number of large-scale, well-designed projects. If a project is to attract funding it has to offer a satisfactory rate of return to reflect the risks involved. The Commission believes, however, that the profitability of a project should not be measured in narrow financial terms alone, but should be extended to include

other factors such as its effect upon cohesion or enlargement. But it may be difficult to convince the private sector of the merits of this approach.

To stimulate private sector involvement in the establishment of TENs, the EU has proposed a number of initiatives. The original action plan for the attainment of TENs⁵ was more a statement of intent than a plan of action as it did little more than suggest ways in which the EU could use its limited resources to aid their evolution by, for example, offering "soft" loans, finance for feasibility studies or the attaching of the Declaration of European Interest label to certain projects. More concrete action was forthcoming as a result of the Edinburgh Summit, which established the European Investment Fund (EIF), which was given resources to offer loan guarantees to ease the development of TENs. Such action was clearly inadequate, however, and the White Paper sought to build upon these incentives to put together a more active strategy to aid the financing of TENs.

Incentives within the White Paper

Of all the measures contained within the White Paper the one that has attracted the most controversy is the proposed average annual call for finance, by the EU, of ECU 20 billion, which it would use to develop TENs (cf. Table 4). Clearly the funding involved is based upon the assumption that the private sector can provide the majority of the funding needed but in some places, especially the transport sector, the EU may need to nudge the market to provide the necessary finance. Such assistance can come in a number of forms but essentially all seek to reduce the

Table 4
Community Financing of TENs

(Average Financing per annum)

Source	Amount in ECU billion
Community Budget	5.3
of which:	
TENs	0.5
Structural Funds (TENs)	1.35
(Environment)	0.6
Cohesion Fund (TENs)	1.15
(Environment)	1.15
Research and Development (Telecoms)	0.5
(Transport)	0.05
European Investment Bank	6.7
Union Bonds	7.0
Convertibles guaranteed by EIF	1.0
Total	20

Source: EU.

⁵ Commission of the European Communities: Towards Trans-European Networks, COM(90)585, Brussels 1990.

risk and financial barriers involved, at least initially, in developing these projects.

The Commission's plan for more finance foresees the money coming from three major sources: first of all, through enhancing existing budgetary instruments; secondly, by giving the EIB a greater ability to offer more finance especially to priority projects, linked to the attainment of TENs, in peripheral areas; thirdly, and most controversially, the establishment of new independent financing devices such as the "Union bonds". These bonds would be issued by the EU, using the EIB as its agent, to assist the financing of major infrastructure projects. The Commission developed these bonds because it felt the EIB would not want to take the risks associated with large infrastructure projects. This is something the EIB rejects. The EU also plans to develop convertibles (a form of bond) guaranteed by the EIF which would be issued for long maturities. The EU will use its top credit rating to get these loans but it is feared this could be endangered by lending to the less frugal member states.

Several member states are worried about whether the EU is sufficiently accountable to raise such levels of finance. Giving the EU the right to raise money in its own right is not a pleasant scenario to some member states, as the Commission's lack of financial power was always a constraint upon its political power. It is clear that the powers given to it by the Treaty upon European Union are going to be used by the Commission to establish a more activist role for itself in this area of policy. The financing proposals, if successful, are a step towards achieving this.

The projects to be given the benefit of these initiatives would be those specified in the EU's extensive master plans. The cost of attaining these plans is high because they are based upon member states' recommending what projects should be developed. Put simply, the more projects member states get accepted on to the master plans, the greater the chance there is of getting money. However, in prioritising projects, those with the most apparent "European dimension" would tend to be given preference.

Clearly the intention of these incentives is to counter the possibility that a market-led process of infrastructure provision may lead to TENs developing in a piecemeal and incoherent fashion. Such an approach is also popular with member states for either ideological reasons or because it makes no more demands upon their already tight budgets. Therefore the EU needs to establish a role to facilitate the private financing of TENs. The White Paper and the incentives it offers are far from universally approved, but any action has to be seen in the context of the fact that it is merely seeking to complement a market-based approach, not to replace it.

The EU needs, perhaps, to be more dynamic and radical in its approach to private infrastructure provision. In the telecommunications sector, private finance has been forthcoming as a result of the opportunities afforded by the liberalisation process. Clearly the Bangemann report, in its initial conclusions, believes liberalisation has worked as it proposes an acceleration and extension of this process. The problems are different for the other sectors but still market-based solutions exist and have been used to finance infrastructure provision in some member states. There is the possibility of using franchising or tolls to encourage private sector participation even if it is in partnership with the public sector. Private finance is available if it is given sufficient incentive to get involved. To realise this the EU and the member states have to understand under what conditions these resources would be forthcoming.

In addition there is a case for the development of an institution to oversee the evolution of TENs within the various sectors. This body would act as a forum for all economic operators who have a direct interest in the establishment of TENs, be they users, providers, governments or European bodies, thus helping to raise the profile of TENs and establish where infrastructure problems are most acute. The establishment of such a body would provide a focal point in the evolution of Europe's infrastructure, encouraging member states to take a global perspective in their development; it could also assist in the financing of projects and oversee the implementation of the TENs programme. The establishment of a European infrastructure body would be a vital indicator as to how seriously the EU takes the problems of its infrastructure.

Conclusion

The development of TENs is important to the integration and competitiveness of the EU economy. The desire to have the process of infrastructure provision market-led is an important watershed. However, given the massive financing problems there seems to be, at the moment, little incentive for the commercial sector to get involved. The White Paper has initiated, and established, a number of proposals to complement private sector action within the framework of an overall strategy for the attainment of TENs. Some member states are however obstructing any attempt by the EU to be more active in the attainment of TENs. Only by seeking to empower bodies which will take an overall perspective will the motivation for the establishment of TENs be maintained. Without this the TENs project will remain yet another one of those good ideas which, despite a lot of effort, never really seemed to take off.