Transport and Logistics Development and Issues in the European Single Market: relevant to Australia?

David Taylor,
Visiting Logistics Fellow,
Royal Melbourne Institute of Technology

John Clements,
Head of Department
Department of Marketing, Logistics & Property
Royal Melbourne Institute of Technology

Abstract:

The paper outlines the development of the Single European Market and its impact on transport and logistics. Changes have taken place in the logistics systems adopted by European manufacturers which have resulted in increased demand for road freight transport. European legislation has also led to the development of freer and more harmonised transport markets. The environmental and social impacts of changes in both the supply and demand for transport are highlighted and the initiatives to transfer freight from road to rail in order to minimise these impacts are considered. The paper concludes by reviewing the relevance to Australia of some of the major European issues and policies.

Contact Author:

David Taylor
Visiting Logistics Fellow
Logistics Management Group
Faculty of Business
Royal Melbourne Institute of Technology
GPO Box 2476V
MELBOURNE VIC 3001

Telephone: (03) 660-1972
Fax: (03) 639-1864

1. INTRODUCTION

In 1985 the European Parliament passed the Single European Act with the aim of creating the Single European Market (SEM) by 31 December 1992. In the period since 1985 wide ranging and fundamental changes have taken place within the twelve European Community (E.C.) states in many aspects of political and economic life.

Legislation relating to transport and particularly freight transport has been critical in the creation of a unified economic trading area. However, the transport policies designed to improve the economic efficiency of the European Community have had significant environmental and social impacts, some of which were recognised at the planning stage but many are only becoming apparent as the single market develops.

This paper outlines the principal changes in transport and logistics activity in Europe and discusses the conflict and trade offs between economic, environmental and social objectives. The paper concludes by highlighting a number of issues and approaches from Europe which may be of relevance to current problems in Australia.

2. THE AIMS AND DEVELOPMENT OF THE SINGLE EUROPEAN MARKET

There is a strong economic logic for the unification of the twelve nations which comprise the SEM. Table 1 shows that in comparison to the main trading rivals of Japan and America, Europe as whole has had inferior economic performance. It has been argued that the prime reasons for the poorer performance prior to the creation of the SEM was because:

- each European nation acted as an independent economic unit, with different regulations and standards governing industries and products;
- trade between nations was subject to increased cost due the formalities and disruption of cross border international trade.

It has been calculated that in 1988 border crossing formalities and delays were adding the equivalent of $A16 billion per annum to the costs of European industry. (Cecchini 1988)

Table 1 **GDP Comparisons**

	Population Millions)	GDP ($US Bn)	GDP ($US 000's) per Head
EC	323	4,745	14.7
Japan	122	2,843	19.5
USA	248	4,806	18.5

Source: National Westminster Bank (1988)

From an economic perspective the principal aims of the creation of the SEM were:

- to abolish the barriers to trade between EC states;
- to harmonise the legal requirements affecting industry in terms of product standards, modes of operation, environmental regulations etc;
- to create free competition between industries within Europe unfettered by national government restrictions or subsidies; an objective particularly relevant to the transport industry.

If these aims could be achieved it was believed that this would:

- increase the volume and reduce the cost of trade between European States;
- allow European companies, particularly manufacturing companies, to standardise products on a European basis and thereby achieve economies of scale by producing 'single European products' rather than a variety of products to meet the requirements of individual national markets;
- make European industry more competitive on a world scale by enhancing the competitive environment within Europe.

In order to achieve the economic integration which most Europeans welcome, there has been a corresponding need to increase political and social integration some of which is less welcome.

3. THE IMPACT OF CREATION OF THE SEM ON LOGISTICS & TRANSPORT ACTIVITY

Demand for freight transport is derived from the movement requirements of the manufacturing, primary production or distributive sectors of the economy. Before examining emerging patterns in European freight transport operations, it is therefore necessary to understand the changes which are taking place in industry. In the European context, it is the manufacturing sector which is undergoing the most significant change.

Changes in manufacturing logistics operations

The traditional organisation of many major manufacturing companies in Europe was to have a series of nationally-based factories, each producing a product range to meet the specific needs of the local market and each operating fairly autonomously. Although there would be some inter-plant/inter-country movements of parts or finished product, the main transport requirement was for distribution of finished products within natural boundaries. With the creation of the SEM most major manufacturers have reviewed their manufacturing and distribution policies resulting in a number of significant changes:

- development of standardised Euro-products;
- reduction in the number of manufacturing plants;
- rationalisation of product ranges in order to gain economies of scale in production.
- rationalisation of warehousing and distribution systems by the creation of either centralised European warehousing or a number of European regional distribution centres.

Figures 1, 2 and 3 illustrate these changes in relation to the companies Ciba Geigy, Philips and Dupont.

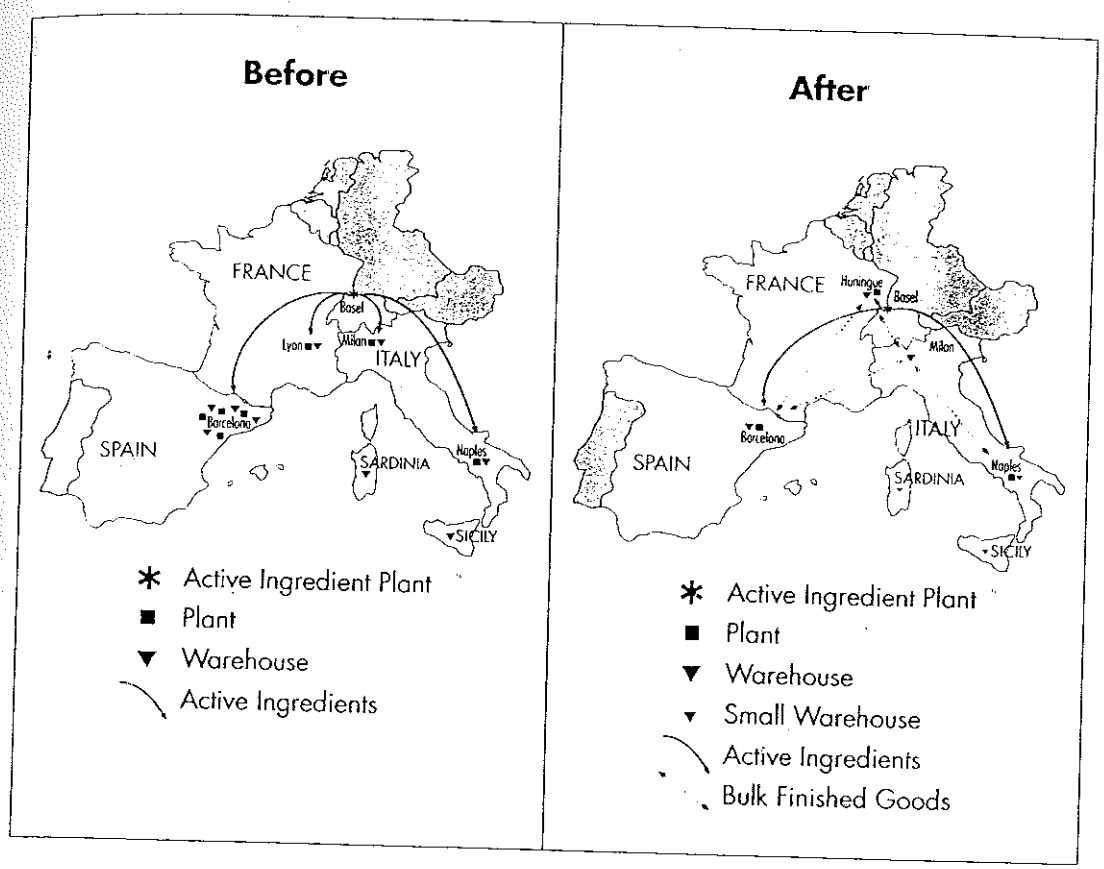

Figure 1 **Ciba-Geigy post-1992 manufacturing and distribution reconfiguration**

Source: Ciba-Geigy (1992)

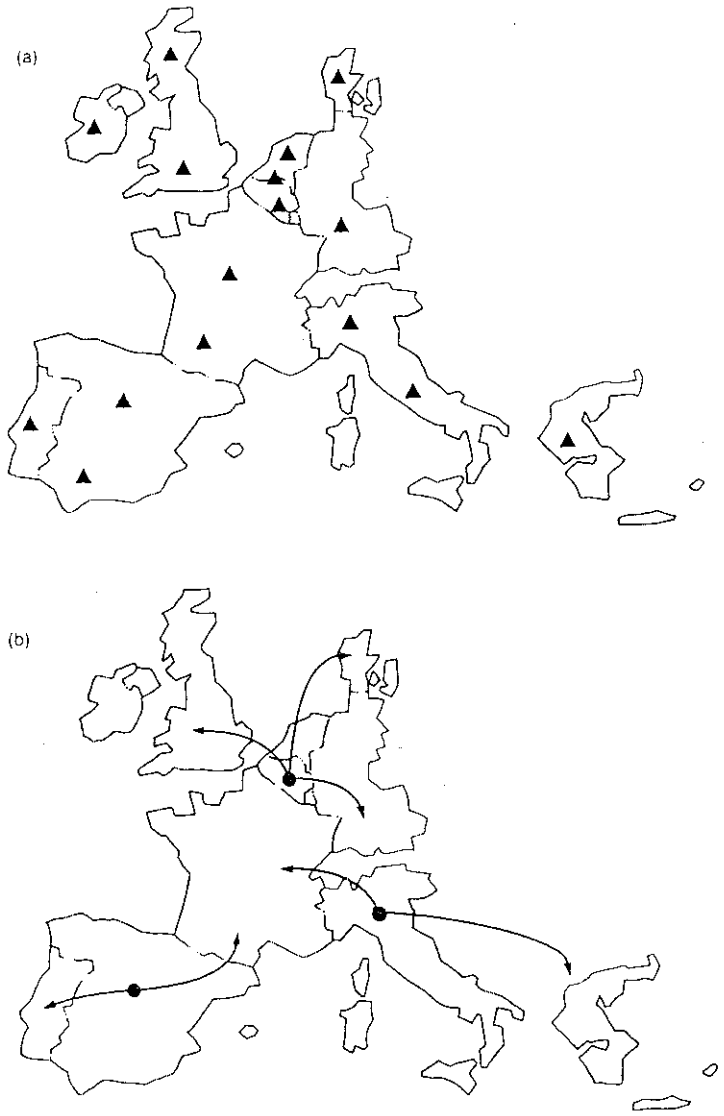

Figure 2 **Philips distribution centres before (a) and after (b) 1993**

Source: AT Kearney (1992)

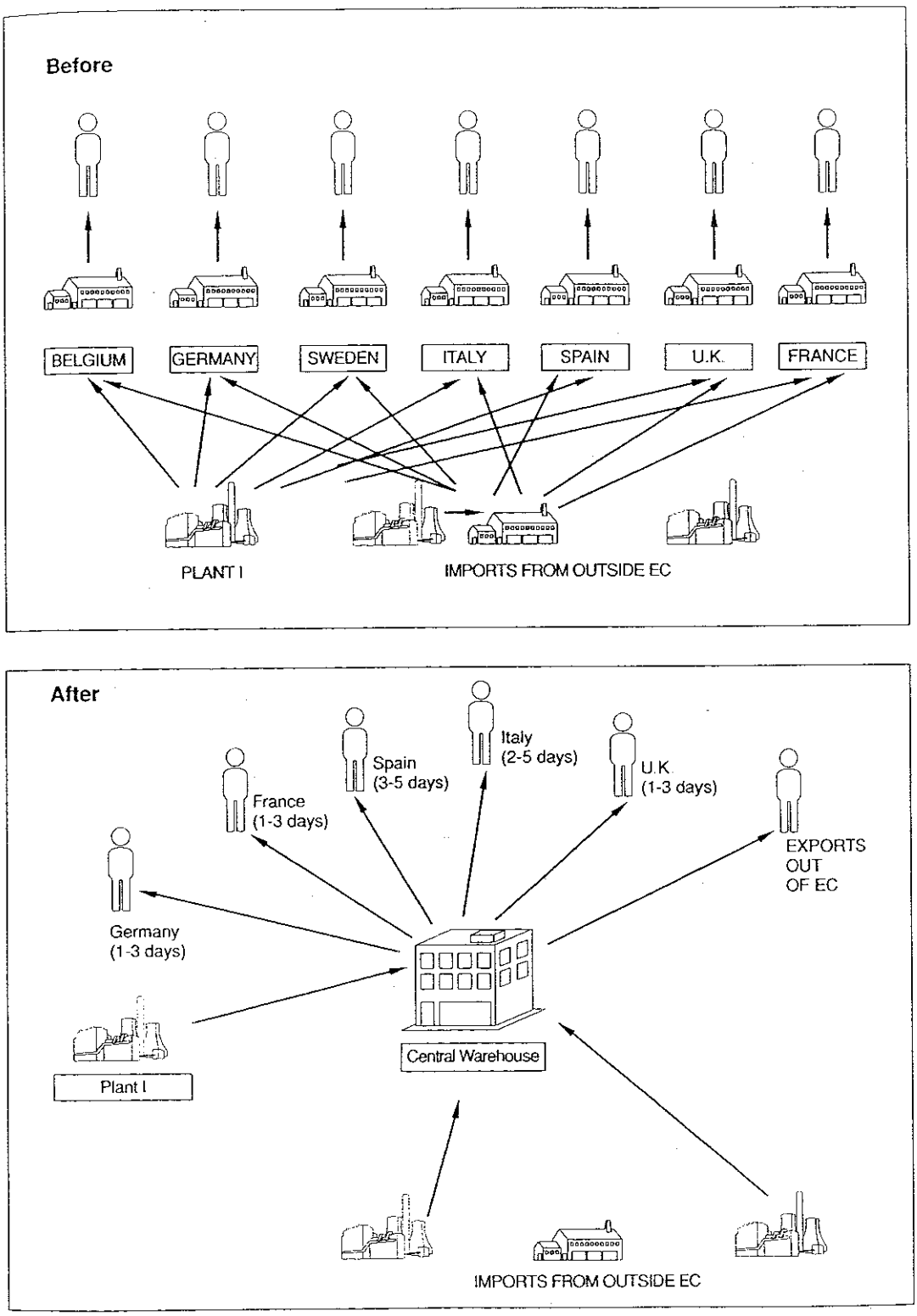

Figure 3 **DuPont's European transit center**

Source: DuPont (1990)

In planning such changes the companies have clearly identified and quantified the trade-offs between lower manufacturing and inventory holding costs and increased transportation costs. It is less clear whether European legislators adequately recognise the trade-off implications of policies designed to increase industry efficiency but which are leading to increased traffic congestion and pressure to expand transport infrastructure, especially roads.

Changes in freight transport operations

Table 2 shows that European freight transport is dominated by road, a situation which is becoming increasingly pronounced as the railway's share of the market is in decline. Furthermore, between 1960 and 1990 the railways share of freight tonne/kilometres carried in Europe declined from 50% to 20%, a trend which is continuing today.

Table 2 European Modal Split, 1985

	Million tonnes lifted by Mode of Transport			
	Road	Rail	In. Water	Total
Domestic	5,881(89%)	559 (8%)	192 (3%)	6,632 (93%)
Intra-EC	116 (30%)	71 (20%)	187 (50%)	374 (5%)
Extra-EC	22 (21%)	63 (60%)	20 (19%)	105 (2%)
TOTAL	6,070(85%)	693 (10%)	340 (5%)	7,111 (100%)

Source: Eurostat (1988)

Road freight transport

The Single Market legislation in relation to road transport has had two objectives:

- *Liberalisation* - meaning the creation of a free market in road transport without government control of the numbers of transport operators, the prices charged or the number of journeys carried out. Liberalisation also means operators from each European nation will be able to compete equally in any other member state;

- *Harmonisation* - often referred to as "the creation of a level playing field". The aim is to standardise the regulations governing transport operations across all European states. For example, permissible gross vehicle weight, permitted driving times and financial conditions such as methods of taxing goods vehicles.

The Single European Act of 1988 specified the deadline of 31 December 1992 for achievement of liberalisation and harmonisation. Although this deadline was not met in full, European road transport is rapidly becoming a free and harmonised market place.

The objective of a free market is to improve the overall efficiency of the European road transport industry, and although this is undoubtedly occurring, there have been some unforseen and negative trade-offs. For example, abolition of circulation permits and the establishment of easier market access rules for community members has lowered the quality of transport provided by some carriers (Council of Logistics Management 1993). Furthermore, in the short run the free market is creating increased transport capacity causing some operators to sacrifice quality for aggressive price competition.

Less stringent market entry regulation has meant that many small firms are entering the market with only limited capital to finance and maintain vehicles. In the UK alone there are 120 000 licensed road hauliers, of which 100,000 operate less than five vehicles and 50,000 operate only one vehicle. Many of these small companies run old vehicles and have insufficient capital to adequately maintain them to meet modern safety and environmental standards.

There are however also many positive developments occurring in the new European transport environment. A number of the larger distribution companies such as Danzas, Nedlloyd and NFC are responding to the demands from manufacturing industry for better and more extensive services by creating Pan-European distribution networks which offer high levels of service to customers. Large manufacturers are prepared to pay the premium prices commanded by these services because transport efficiency has become a critical success factor in the operation of their reconfigured European supply chains.

Overall, for both urban and inter-urban traffic, the legislative changes in relation to manufacturing and transport have resulted in an overall increase in the demand for road transport, which in turn is leading to increased congestion, together with other negative environmental and social impacts. As these problems become apparent other parts of the European legislation are being changed to impose increasingly stringent conditions on road transport to protect the environment and reduce the negative social impacts of increased freight on the roads. For example, tighter emission and noise controls on goods vehicle, bans on truck movements at certain times such as weekends or in certain places such as Alpine routes and urban areas.

The European legislature has therefore on the one hand introduced polices which encourage road usage but on the other hand is attempting to curb road usage as its negative effects become apparent.

European rail freight

Historically European railways have developed as independent national and nationalised networks. Cross border movement of rail freight has been difficult because of limited co-operation between national rail operators and different rail infrastructures (eg different track and loading gauges) and different operating practices.

The service offered to shippers, particularly for international movements, is poor and in consequence rail freight has a low and declining share of the freight market. Industry has a very poor perception of rail as a viable mode for speedy, reliable or cost effective transport.

The European Community vision for railways is:

- to create a Pan-European rail network allowing seamless movement across national borders;

- to decouple the ownership and control of rail track from the ownership of the rolling stock with track generally remaining under state control, whilst rolling stock and the operation and marketing of rail service will be provided by a number of competing private sector companies;

- to abolish state subsides to rail, particularly rail freight services, and develop price structures which are market driven.

The first steps towards this vision are currently being undertaken in Britain. "Railtrack", a government body, has been created to manage the track whilst the various passenger and freight operation divisions of British Rail are being privatised this year. Private companies, including major road freight operators will have the opportunity to operate trains over the track with rolling stock being available for purchase or lease.

From a freight perspective, the vision of an efficient, integrated European rail network is however a long way from reality, for the following reasons:

- Achieving co-operation between national rail operations is very difficult because of entrenched nationalistic, bureaucratic and non-commercial attitudes within the rail companies;

- Railways are subject to policy decisions both from the European commission and from individual national governments which have the power to override EC directives in certain circumstances;

- Where improvements are taking place they are primarily focussed on high demand passenger corridors such as London - Paris or Paris - Lyon and there is little real investment in improved rail freight systems. Already freight has secondary priority through the channel tunnel and when the tunnel approaches capacity it is likely that the more lucrative passenger traffic will squeeze out freight traffic;.

- Service levels for rail freight in terms of speed and particularly reliability are low - a situation which shippers find increasingly unacceptable as industry moves to JIT delivery requirements.

Rail freight thus faces an enormous challenge to win back traffic from the road sector which, with the creation of the SEM, has become increasingly competitive in price and increasingly innovative in the services offered.

4. POLICY TRADE-OFFS IN RELATION TO EUROPEAN TRANSPORT

The creation of the SEM has been primarily viewed as a means of enhancing the efficiency and competitiveness of European industry and to a large extent the proposed changes will achieve this objective.

However, the commercial reaction of industry to the altered economic environment is resulting in new pressures. In particular, the revised logistics strategies adopted by manufacturers is leading to increased demand for freight movement in terms of the distance, frequency and volume of shipments.

The challenge of the next decade is to meet the demand for greater movement of freight and at the same time reduce the impact of increased traffic on congestion and the natural and social environment.

In Europe congestion is becoming a major economic and political issue. It is not just an urban phenomenon, as major inter-urban roads are also becoming congested as is shown in Figure 4. Governments, both EC and national, continue to attempt to solve congestion by road expansion schemes despite the evidence that new roads usually generate traffic and hence reach capacity well ahead of their planned date. As an example, sections of the London orbital motorway, which was opened in the late 1980's, were carrying more traffic within 3 months of opening than had been predicted for the year 2000.

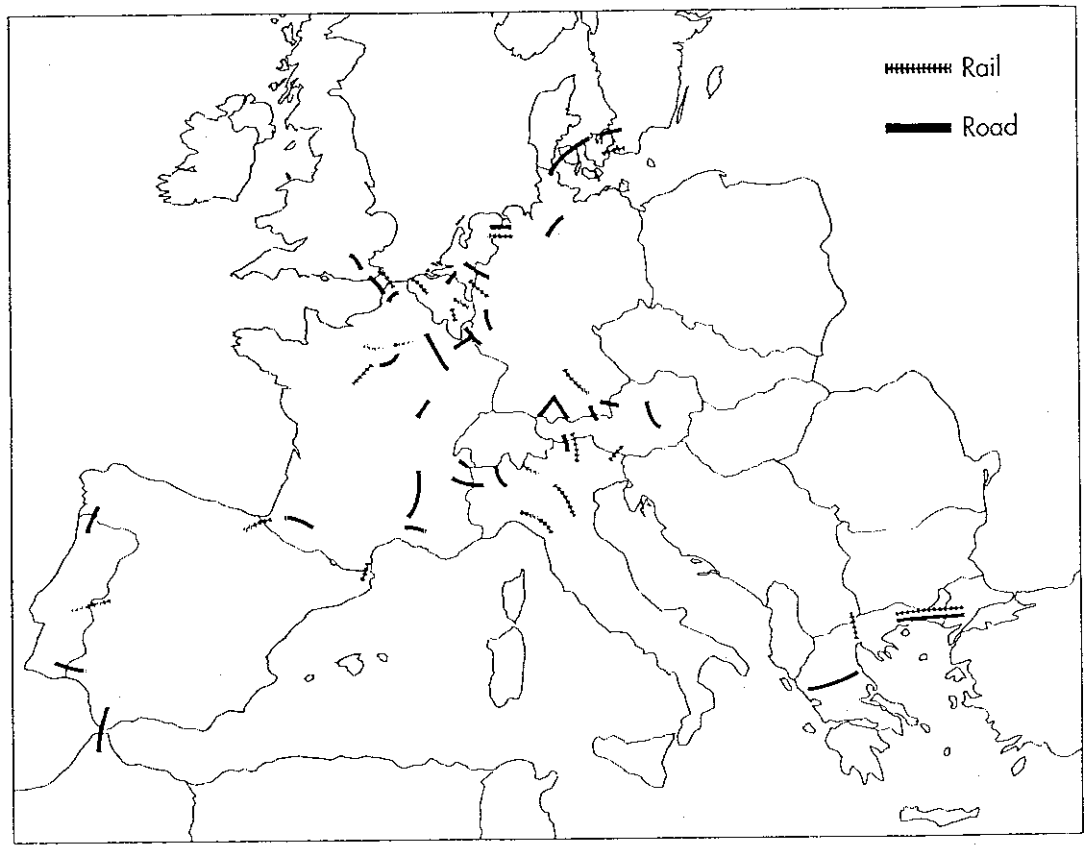

Figure 4 **Patterns of congestion**

Source: European Conference of Ministers of Transport (1986)

The only viable alternative to continual road expansion appears to be increased use of rail, particularly for long distance freight trunking. This would not only reduce road congestion but also reduce the social and environmental costs associated with transport as is shown in Table 3.

Table 3 Yearly estimated social costs by transport mode (1991)

Cost	*Air (%)*	*Rail (%)*	*Road (%)*	*Total*
Pollution (air/noise)	28	9	63	100
Land	1	8	91	100
Construction/ maintenance	2	42	56	100
Accidents	1	1	98	100
Total in billions of ECU (billions of U.S. dollars in parentheses)	4 ($4.9)	28 ($34.6)	150 ($185.4)	182 ($224.9)

Source: Council of Logistics Management (1993)

There are strong arguments favouring the use of railways for inter-urban freight movements and indeed European governments all express a desire to transfer freight from road to rail. In practice however, this transfer is not taking place for a number of reasons:

- some governments despite paying lip service to rail, are reluctant to invest adequately in rail infrastructure for freight services;
- there is a strong political lobby for more road construction;
- industry is primarily road-located and few companies are connected directly into the rail network, necessitating expensive modal transfer at each end of a rail journey;
- industry has little confidence in rail operations to provide the higher service levels and reliability required by modern logistics systems.

It may be that despite the unwillingness or inability of governments to encourage a mod shift to rail, such a movement will take place because of the commercial reaction industry to three factors:

- Increased road congestion which destroys reliability may encourage more shippe to consider using rail for long distance trunk service;
- Opening up the rail network to private operators and in particular to larg distribution companies that wish to offer multi-modal , through transport service could rapidly transform the non-commercial and non-competitive attitudes tha currently pervade railway operations;
- Increased costs imposed on road transport through tighter environmental and socia regulations or through specific "environmental taxes" may give a cost incentive t move away from road.

The future of European policy in relation to transport, the environment and social matters i uncertain. The prime emphasis of the last 10 years has been to create a single and free market area to encourage economic efficiency. This emphasis is likely to remain for some time but the next 10 years will almost certainly see increased pressure to curtail the negative environmental and social impacts of this new and expanding free market system.

EUROPEAN TRANSPORT AND LOGISTICS ISSUES - RELEVANT TO AUSTRALIA?

While the operating conditions for freight transport and the forces for change in logistic practices are in many ways different in Europe compared to Australia, there are some very interesting and perhaps useful similarities.

The most important similarity in regard to trade-offs is the pressure for logistic changes by producers and manufacturers, importers and exporters, wholesalers and retailers to improve their international competitiveness by increasing production and service quality and simultaneously reducing costs. As a result, manufacturing and warehousing is becoming increasingly consolidated and greater use is being made of road transport to provide the necessary service standards required by customers and Just-In-Time systems. Road transport is increasingly being used even for longer distance freight resulting in greater demand for major road investments and increased environmental and social pressures.

Many of the problems associated with Australian government owned and operated transport systems, especially rail, have also been experienced in Europe. Problems such as large deficits, under-utilisation of assets, lack of reliability and poor service image, government interference in pricing and service provision and the resulting confusion of commercial and social objectives are being tackled in Europe. International competitiveness, especially as a result of the creation of a single economic market, is a significant driver of these reforms and the outcomes are of relevance to Australia.

Key issues in the European experience that are relevant to Australia seem to be:

- achieving effective co-ordination and integration of rail freight systems, capable of providing high service levels and competitive freight rates without government subsidy;
- financing major investment in rail and road infrastructure and rail rolling stock;
- harmonising road transport regulation and achieving charges for road and rail transport that accurately reflect full economic and social costs;
- decreasing the environmental and social costs of increased transport demands, especially for urban road freight, due to changing logistics needs of industry and consumers.

The types of solutions proposed, and in some cases being implemented, in Europe to the above issues are:

- National governments are being encouraged to get out of rail rolling stock ownership and control. Government will still finance and own track and other related infrastructure, but will move out of service operations. This will encourage more rapid development of multi-modal operations (freight forwarders) who are more responsive to customer service need and will ensure competitive levels of service are provided by rail. Effective co-ordination of rail systems is not being sought by creating a 'super- EC' rail body;
- governments will continue to invest in major road infrastructure projects, although some private investment will occur. User pay charges (eg toll roads) especially for major new road developments will become normal practice;

- realistic road use charges for heavy road transport vehicles that include their environmental and social costs;
- greater control of heavy road transport vehicles access in urban areas;
- full cost recovery for rail services, including commercial charges for use of infrastructure - more difficult in Australia given the lack of high volume, high price passenger traffic to spread overhead costs.

CONCLUSION

The optimistic view of transport development in the EC is that by combining such reforms a better mix of road and rail freight transport will occur that not only achieves an efficient economic market but also reduces environmental and social impacts. The pessimistic view is that governments will be neither willing enough to invest adequately in rail as well as road infrastructure nor sufficiently prepared to forgo control of rail operations, resulting in sub-optimal economic, environmental and social solutions. Similar challenges exist in Australia.

REFERENCES

Cecchini, P (1988) *The European Challenge 1992*. (Wildwood House: Aldershot UK)

European Conference of Ministers of Transport (1986) *International Traffic and Infrastructure Needs* (OECD Publications Service: Paris)

The Council of Logistics Management (1993). *Reconfiguring European Logistics Systems*. (Council of Logistics Management: Oakbrook USA)

Eurostat (1988) *Annual Statistics 1977-1988* (Office for Official Publications of the European Communities: Luxemburg)

A.T. Kearney Inc (1992) *Road Transport After 1992* (Report of AT Kearney Consulting Group: London)

National Westminster Bank 1988. *Western European Review*. (National Westminster Bank: London)