

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

# THE RESTRUCTURING OF RAILWAYS



**United Nations**

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# **THE RESTRUCTURING OF RAILWAYS**



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**ESCAP WORKS TOWARDS REDUCING POVERTY  
AND MANAGING GLOBALIZATION**

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## Abbreviations

|        |   |
|--------|---|
| AEG    | General Rail Act  |
| ATM    | Automated Teller Machine                                |
| BEV    | Special Asset Federal Railways                          |
| BOLT   | Build-Operate-Lease-Transfer                            |
| BRB    | British Railways Board                                  |
| BREL   | British Rail Engineering Ltd.                           |
| BTC    | British Transport Commission                            |
| CEE    | Central European Economies                              |
| CFF    | Swiss Federal Railways                                  |
| CFL    | National Rail Company of Luxembourg                     |
| CIE    | Coras Iompair Eireann                                   |
| CIS    | Commonwealth of Independent States                      |
| CONCOR | Container Corporation of India                          |
| CR     | Chinese Railway   |
| DB     | Deutsche Bundesbahn                                     |
| DR     | Deutsche Reichsbahn                                     |
| DSB    | Danish State Railways                                   |
| EC     | European Commission                                     |
| ECMT   | European Conference of Ministers of Transport           |
| EEC    | European Economic Communities                           |
| EFTA   | European Free Trade Area                                |
| ESCAP  | Economic and Social Commission for Asia and the Pacific |
| EU     | European Union  |
| FOIS   | Freight Operations Information System                   |
| FS     | Italian Railways  |
| FSEMT  | Regulator of Natural Monopolies in Transport            |
| GDP    | Gross Domestic Product                                  |
| GWR    | Great Western Railway                                   |
| IR     | Indian Railways   |
| IRCTC  | Indian Railways Catering and Tourism Corporation        |
| JNR    | Japanese National Railways                              |
| LMS    | London, Midland and Scottish Railway                    |
| LNER   | London and North Eastern Railway                        |
| MPS    | Ministry of Railways (of the Russian Federation)        |
| NS     | Netherlands Railways                                    |
| OPRAF  | Office of Passenger Rail Franchising                    |
| PKP    | Polish State Railways                                   |
| PSO    | Public Service Obligation                               |
| PSP    | Private Sector Participation                            |
| RAI    | Iranian Islamic Republic Railways                       |
| RAO RR | Russian Railways Limited                                |
| RITES  | Rail India Technical and Economic Services              |
| RFF    | Réseau Ferré de France                                  |
| RHK    | Finnish Rail Administration                             |
| RRC    | Royal Railway of Cambodia                               |
| RRP    | Railway Recovery Programme                              |
| SLR    | Sri Lanka Railway                                       |
| SNCB   | Belgian National Railways                               |
| SNCF   | French National Railways                                |
| SPV    | Special Purpose Vehicle                                 |
| SR     | Southern Railway  |

|      |   |
|------|---|
| SRA  | Strategic Rail Authority                          |
| SRT  | State Railway of Thailand                         |
| SSRA | Shadow Strategic Rail Authority                   |
| SWOT | Strengths, Weaknesses, Opportunities, and Threats |
| TU   | Traffic Units                                     |
| VR   | Finnish State Railways                            |
| VR   | Vietnamese Railways                               |

## Glossary

The following is a glossary of the main technical terms used in this Treatise:

|  |   |
|--|---|
| Abuse of dominant position             | Anti-competitive business practices in which a dominant firm may engage in order to maintain or increase its market position.   |
| Acquisition                            | Refers to obtaining ownership or control of another firm.   |
| Anti-competitive practices             | Refers to a wide range of business practices by a firm or group designed to restrict inter-firm competition.  |
| Antitrust                              | A field of economic policy and law dealing with monopoly and Monopolistic practices.  |
| Average costs and average cost pricing | Average costs consist of the total costs of providing a transport service, including infrastructure, divided by some measure of output, such as vehicle-kms. They are relevant to cost recovery, since prices that are set equal to average costs will ensure that total costs are recovered because total costs include both fixed and variable costs. |
| Barriers to entry                      | Factors which deter entry by new firms, into a market, even when incumbent firms are earning excess profits.  |
| Bid-rigging                            | A form of collusive price-fixing by firms involved in contract or franchise bidding.  |
| Bilateral monopoly or duopoly          | A situation where a single or very few producers exist in a particular market.  |
| Capital costs                          | Capital costs comprise the consumption of fixed capital and interest payments, and usually represent a high proportion of infrastructure costs. They differ from annual capital expenditure that may or may not cover all the capital costs. If annual expenditure is less than the quality of the transport assets will deteriorate.                   |
| Cartel                                 | A formal agreement amongst firms in a monopolistic industry to fix prices and or output.  |
| Collusion                              | Conspiracies or agreements amongst firms to fix prices or outputs.  |
| Competition                            | A situation in which many buyers and sellers interact and in which prices and output are determined without collusion amongst either buyers or sellers.   |
| Concentration                          | A measure of the extent to which a small number of firms account for the total output in a particular market.   |
| Concession                             | A contractual arrangement whereby a supplier acquires rights to provide a service a given standard or specification, for a fixed time, on usually on behalf of a government or government agency.   |

|                        |  |
|------------------------|--|
| Congestion             | Congestion arises when traffic exceeds infrastructure capacity and the speed of traffic declines. It can be defined as a situation where traffic is slower than it would be if traffic flows were at a low level.  |
| Congestion costs       | Congestion costs comprise direct costs, including time costs and opportunity costs of time lost to third parties due to delays, and environmental costs.   |
| Contestability         | <p>A contestable market is one in which:</p> <ul style="list-style-type: none"> <li>(i) there are no barriers to entry or exit;</li> <li>(ii) all existing and potential producers have access to the same technology; and</li> <li>(iii) there is perfect information available to producers and consumers;</li> </ul> <p>Unlike perfect competition firms need not be price-takers. The analysis of contestable markets is intended for situations, where economies of scale prevent the existence of a large number of firms.</p> |
| Cost recovery          | This is an approach to infrastructure charging whereby fixed and variable costs are recovered in full or in part.  |
| Cost relatedness       | This means that charges cover at least marginal cost and relate to these in a non-distortion generating way.   |
| Cross-subsidization    | Cross-subsidization involves supplying transport services to one group of consumers (users) at a loss, which is made up by profits on services provided to other consumers (users). It can be viewed as a particular way of allocating rents associated with the transport activity.   |
| Cut-throat competition | Refers to destructive or ruinous competition where resulting prices do not cover total costs for a prolonged time period.  |
| Depreciation           | Depreciation is an accounting charge for the decline in value of an asset spread over its life.  |
| Dominant firm          | A firm that supplies a significant proportion of the market and significantly more than its nearest rival.   |
| Duopoly                | A market with two sellers.   |
| Economic efficiency    | Sometimes referred to as 'pareto efficiency' which occurs when the least resources are used to produce a given level of output. Competition is generally regarded as creating economic efficiency.   |
| Economies of scale     | Scale economies exist where average costs fall as output increases.  |
| Economies of scope     | Scope economies exist where it is cheaper to produce two or more goods or services collectively, or jointly, than individually.  |
| Elasticity of demand   | Refers to the responsiveness of demand to variations in price; income, or the demand for other goods or services.  |
| Excess prices          | Prices in excess of those that would be sustainable under competition.   |

|                                 |   |
|---------------------------------|---|
| External costs or externalities | External costs are those which the user of a service does not pay for, they include infrastructure use where use is free, damage, pollution, noise, health, accidents costs, and congestion costs Failure to acknowledge such costs may result in excessive use of a transport service.   |
| Fixed costs                     | Fixed costs are those which are independent of traffic flow or usage.   |
| Flat-rate charge                | A charge, normally applied to transport infrastructure, which does not vary with usage.   |
| Franchising                     | A contractual arrangement whereby a supplier (franchisee) provides a service or brand to a given standard or specification, for a fixed time, on behalf of a franchisor. Franchising agreements may cover prices and service levels.  |
| Infrastructure                  | The basic industries, investment or activities providing intermediate goods or services and regarded as a country's foundation. Infrastructure industries included water, electricity, gas, telecommunications and transport.   |
| Internal costs                  | Internal costs are those which the user pays for.   |
| Interest                        | Interest charges reflect the opportunity cost of capital. In the public sector the interest rate is usually comparable to the refinancing cost of government loans.   |
| Investment expenditure          | This reflects the annual expenditure on fixed assets with lives greater than one year – such as infrastructure and vehicles. Such expenditure is normally 'capitalized' with a depreciation rate and an interest rate reflecting the opportunity of capital invested.   |
| Licensing                       | Refers to the giving of a right to undertake an activity.   |
| Limit pricing                   | A practice whereby an incumbent firm limits prices in order to deter potential new entrants to a market.  |
| Maintenance                     | Maintenance costs represent the costs necessary to maintain the existing infrastructure. A distinction can be made between maintenance which is time-related and that which is use related.   |
| Marginal costs                  | Marginal costs are specific variable costs related to the provision of a service or the use of infrastructure. Short run marginal costs are the additional operating and maintenance costs associated with a marginal increase in output without any increase in physical capacity. If external costs are also included this is referred to as marginal social cost. Long run marginal costs include the capital costs of increasing capacity to accommodate an increase in output - they are difficult to measure. Linking charges to long run marginal costs would lead to significant inefficiencies where excess transport capacity exists. |
| Market                          | A place or mechanism where buyers and sellers interact.   |

|                          |  |
|--------------------------|--|
| Market failure           | Arises where the market does not produce a 'pareto' efficient outcome in terms of price or output. The main sources of market failure are externalities; monopoly; and, inadequate information.          |
| Market dominance         | Refers to the ability of a firm to act as a monopolist by raising prices or restricting output on a sustained basis.   |
| Market share             | Measures the relative share of a market possessed by a firm in terms of sales or revenues.   |
| Merger                   | An amalgamation of two or more firms in a market.  |
| Monopolistic competition | Refers to a state between monopoly and perfect competition which possesses features of both.   |
| Monopolization           | Attempts by a dominant firm to control or monopolize a market.   |
| Monopoly                 | A market with a single supplier.   |
| Monopsony                | A market with a single buyer.  |
| Natural monopoly         | A market where a single producer can produce goods or services at a lower cost than if two or more producers existed.  |
| Non-price predation      | Actions designed to increase rivals' costs.  |
| Oligopoly                | A market in which there are a small number of firms who realize their interdependence on pricing and output matters.   |
| Operating costs          | These are running costs associated with operation of transport services.   |
| Perfect competition      | See Competition.   |
| Predatory pricing        | Setting prices at less than marginal cost in a deliberate attempt to force competitors or potential competitors out of a market.   |
| Price Discrimination     | This is where users are charged according to their willingness or ability to pay. Users valuing a service highly will pay a greater contribution to fixed costs than those who are prepared to pay less. |
| Price leadership         | The setting of prices and price increases by a dominant firm in anticipation that smaller firms will follow suit.  |
| Price regulation         | The control of prices or setting of guidelines on pricing, by government or its regulatory agencies.   |
| Privatization            | The transfer of ownership and control of public or state assets, firms or services to private investors.   |
| Profit                   | In economic theory, profit is the surplus earned above the normal rate of return on capital employed.  |

|                        |  |
|------------------------|--|
| Ramsey pricing         | This involves setting charges according to the elasticity of demand of each user or group of users.  |
| Regulation             | The imposition of rules by government, backed by the imposition of penalties, designed to modify the behaviour of firms or individuals, particularly in the private sector.  |
| Rent                   | Refers to the earnings of factors of production (land, labour or capital) that are in fixed supply. Increases in price produce an increase in profit and not supply.   |
| Running costs          | The costs necessary to keep a particular asset or service in operation. They do not enhance the value of the asset.  |
| Second-best            | Exists where markets do not possess the necessary conditions for economic efficiency. The theory of second-best is concerned with developing guidance on how to maximize efficiency where one or more markets are inefficient. |
| Standards              | Refers to the setting of specifications and characteristics for goods and services.  |
| Structural maintenance | Maintenance of a capital nature such road resurfacing. The benefits of this type of maintenance are received over a number of years.   |
| Sunk costs             | The cost of assets with zero re-sale value or which have exceeded their economic life.   |
| Total costs            | The sum of fixed and variable costs, or of capital and running costs.  |
| Two Part Tariffs       | Two part tariffs comprise a fixed charge plus a variable charge. In principle, the latter would be related to marginal costs and the former would be set to contribute to fixed costs.   |
|                        | Those costs that vary with traffic levels. Examples include wear and tear to infrastructure, congestion costs.   |
|                        | The ownership and control by firms of different stages of the production process e.g. in the petroleum industry, vertically integrated firms may be involved in oil extraction, refining, distribution and retail.             |
|                        | The inefficiency arising from the existence of monopolies. Such inefficiencies arise from excessive prices and production costs.   |

---

## Preface

### Purpose

This study is intended to provide support for those, in ESCAP member countries, considering or undertaking railway restructuring. Specifically, it seeks to assist policy makers, transport planning authorities and railway managers, by:

1. Explaining the reasons for, and aims of, railway restructuring in:
  - Creating better managed, more commercially-responsive and market-led railways;
  - Improving their financial performance.
2. Identifying alternative models of railway restructuring (including the technicalities of the processes involved) and their implications for ESCAP member countries.
3. Formulating broad guidelines for Governments in addressing railway restructuring.
4. Giving an overview of the salient features of railway restructuring activities in selected countries in the ESCAP region.
5. Reviewing recent railway restructuring activities in Europe, and identifying the main consequences with regard to:
  - The changing institutional role of Governments and railway organizations;
  - The separation of railway infrastructure from railway operations;
  - The financial performance of the railways;
  - The regulation of fares and competition policy;
  - Their impact on traffic development, service quality, and the role of the railway as public service provider.

### Background

Political changes over the past 20 years have led to unprecedented economic development worldwide. Some of the more spectacular changes have taken place in Asia. The break-up of the former Soviet Union has put newly independent countries on the map, the opening of China to a market economy has led to an exponential increase in exchanges and the return of peace and stability to South-East Asia has generated growing trade within the region as well as between the region and the other major trading blocs such as the United States and Europe. Such changes have resulted in increasing demand for international and domestic transport services which, in many cases, is saturating

existing networks and installations. In spite of this trend and in common with most countries, the region has witnessed a significant shift in transport volumes away from railways to road and air transport in this period. As a result, once the backbone of domestic transport, railways have during the past 20 years seen their market share decline sharply. Indeed in the 1980s, this phenomenon generated some thinking as to whether the railways were still relevant. In the 1990s, however, concern for the environmental costs of transport in general, and of road transport in particular, resulted in a growing acceptance that rail has an important role to play in the national and international movement of goods and people.

In the ESCAP region there are a number of important factors that favour the development and promotion of rail transport, including:

- (i) Ten of the twelve landlocked countries in the region operate a rail system that plays an essential role in providing connections with the nearest ports, often located several thousands of kilometres away;
- (ii) The distances linking the main origins and destinations, both domestically and internationally, are on a scale in which railways have comparative economic advantage;
- (iii) There is a reliance on maritime transport to connect national economies to world markets with the associated need to clear landside port areas quickly to avoid worsening congestion, thereby increasing the importance for ports and Inland Container Depots to be rail-connected. At the same time, containers allow for rapid transfer and trans-shipment times and contribute to smoother interfaces between shipping and rail;
- (iv) A number of countries are major exporters of mineral resources in the transport of which rail transport can play a crucial role owing to its capability to run unit trains of fixed formation between a single origin and destination, with intermediate stops only for train crossing purposes or for operational reasons such as crew or locomotive exchange;
- (v) The continuing growth in the overall volume of cargoes being traded;
- (vi) The use of railways by many Governments to implement a number of social policies, particularly in terms of environmental sustainability.

However, enthusiasm for the inherent qualities of rail transport and the potential benefits to be derived from its greater utilization is tempered, and often offset, by the recognition that railways are costly to operate and that Governments are facing increasing difficulties in allocating adequate resources to maintain, let alone develop, them. With this in mind, and often prompted by international financial institutions tying assistance to reform, many Governments have started to study measures to restructure their railways, possibly with private sector participation. Aware of the difficulties of building a consensus on railway restructuring but recognizing the positive role that railways can play in helping its member countries to address their mobility requirements and their potential contribution in alleviating poverty in remote areas, the Ministerial Conference on Infrastructure adopted the revitalization of railways as part of the Regional Action

Programme (2002-2006) of the New Delhi Action Plan on Infrastructure Development in Asia and the Pacific with the objective of promoting increased responsiveness of railway organizations to the changing demands of the transport market. With this in mind, the secretariat carried out the current study on railway restructuring with the aim of offering guidelines aiming to:

- (i) List as exhaustively as possible the issues relating to rail transport and the restructuring of railway organizations;
- (ii) Highlight their interdependence;
- (iii) Facilitate the definition of a vision by Governments of the region of what the future role and form of their railway organizations should be and lay the ground for possible private sector participation in the development and management of railways.

### **Plan**

The document comprises the following three chapters and two annexes:

*Chapter 1:* Reviews the aims and basic principles that underpin the need for railway restructuring.

*Chapter 2:* Identifies the most commonly contemplated alternative models of railway restructuring (including the technicalities of the processes involved) and their implications for ESCAP member countries.

*Chapter 3:* Formulates guidelines and recommendations for Governments in addressing railway restructuring.

*Annex 1:* Gives an overview of the salient features of railway restructuring activities in selected countries in the ESCAP region.

*Annex 2:* Reviews recent railway restructuring activities in Europe and identifies some of their consequences.

The two annexes review initiatives taken in recent years by selected countries of the ESCAP region and in Europe to improve the commercial performance of their railway organizations. Given the complexities of the processes involved and, more important, given that these processes are ongoing and their impact on rail transport may take years to be fully appreciated, only the most salient features are presented to illustrate how some of the issues and problems of railway restructuring have been tackled by countries both within the region and in Europe.

Railway restructuring is an unfinished agenda that is very much affected by the political, economic and social environment in which it takes place. Changes in one or several of these fields may affect the pace and the reach of the restructuring effort. In this context, adopted policies may be modified, thereby affecting the validity of some of the information presented in the document. Nevertheless, it is hoped that the document will

be a useful source of reference for Governments of the region in their efforts to promote rail transport in the ESCAP region.

# 1

## **Railway Restructuring: Aims and Rationale**

### **Introduction**

In recent years, the need to create better managed, more commercially-responsive and market-led railways has been widely recognized. In consequence, many countries have introduced reforms designed to improve the operational and financial performance of national railways. Such economic reforms, often described as ‘railway restructuring’, have involved the creation of new organizations; revised accounting methods; liberalization through the introduction of competition; privatization, de-monopolization and regulatory reform.

This chapter defines the concept, and explains the aims and rationale that underpin the need for railway restructuring.

### **Section I**

#### **Railway Restructuring Defined**

Railways were, for a period of time, the most technologically-advanced and dominant means of land transport. This dominance meant that railways, throughout the world, have traditionally developed as vertically-integrated organizations controlling their own facilities, performing all operating and administrative functions and unilaterally determining what services to provide to an often captive market. In view of their monopoly status, regulatory structures were put in place to control the railways and these structures have remained mostly unchanged until today. The most common method of regulating railways, in the public interest, was to create a single, state-owned firm, with responsibility for both the railway infrastructure and for providing all train services. It was widely assumed that, since such public enterprises were monopolies, it was necessary for governments to regulate their prices and service provision. Often state railways were required to meet any demand at fixed prices. Indeed, the closure of existing lines or the provision of new services normally required government approval thus placing onerous restrictions on the commercial freedom of state-owned railways.

Such financial constraints on state railways led to growing operating deficits during the 1970s and 1980s. The problem was compounded in many cases by the inability of railway companies to reduce staff numbers or staffing costs due to restrictive agreements and social obligations laid upon them. The result was that most governments were forced into a spiral of increasing subsidization for their railways which was ill-affordable given the need to address other pressing demands for better education, improved health services and national defence needs.

Unprecedented economic growth since 1970 has resulted in increasing demand for international and domestic transport services which, in many cases, has saturated existing

networks and installations. In spite of this trend and in common with most countries, the region has witnessed a significant shift in transport volumes away from railways to road and air transport in this period. As a result, once the backbone of domestic transport, railways have during the past thirty years seen their market share decline sharply. Indeed in the 1980's, this phenomenon generated some thinking as to whether the railways were still relevant. In the 1990's, however, concern for the environmental costs of transport in general, and of road transport in particular, resulted in a growing acceptance that rail has an important role to play in the national and international movement of goods and people.

The emergence and prevalence of competing modes of transport from 1970 have caused governments to question the continuing provision of state-funding to cover losses incurred by railways which were perceived as providing increasingly inadequate services. However, faced with high transport demand and limited resources, many governments now believe that one means of meeting the growing transport requirement is to optimize the use of existing land transport infrastructure, including the railways. In consequence, many countries are now facing the task of restructuring by turning loss-making state-owned railways into stand-alone enterprises operated on commercial principles. Indeed, railway restructuring may be defined as:

**“the adaptation of railway industry structures, institutions and business processes in response to changing customer needs and technological change.”**

## **Section II**

### **The Problems faced by the Railway Sector**

Railways, in many countries, have faced a range of interrelated problems, which typically have comprised of:

- Chronic financial deficits;
  - Growing operating subsidies;
  - Archaic pricing systems where charges are not related to cost;
  - Lack of an equitable fare structure and excessive fares;
  - Costs have been excessively high;
  - Low operating efficiency;
  - Poor management and technical efficiency;
  - Low labour productivity;
  - Severely congested services;
  - Low service quality;
  - Services have failed to respond to need;
  - Deficiencies in the physical infrastructure;
  - Poor asset maintenance;
  - Inadequate funds to invest in transport infrastructure and/or services;
  - Widespread state ownership and operation of transport infrastructure and services;
- and

➤ Low private sector participation in the transport sector.

The list is not exhaustive and there are strong interrelationships between many of the problems. Further, it is not implied that state run railways are necessarily inefficient or lacking in investment funds. Clearly the specific causes, of such problems, will depend on the particular circumstances of each case. Nevertheless, it is possible to anticipate the generic causes of each sub-problem as set out in table 1.1<sup>1</sup>.

Railway organizations are labour-intensive and staff costs often represent their most important single cost driver. In Thailand, the wage bill for staffing accounts for 52 per cent of total expenditure<sup>2</sup>, while in India, wage bills represent over 60 per cent of operating expenditures<sup>3</sup>. In general, labour productivity<sup>4</sup> among the railways of the ESCAP region is low. Three railway organizations have productivity figures of over 1 million traffic units (TU)<sup>5</sup> per employee, namely: China, Japan and the Russian Federation with figures of respectively 1.06, 1.45 and 1.08 million TUs. Other railways fall short of such figures (see box 1.1)<sup>6</sup>. The two sets of figures indicate that there is substantial scope for improvement<sup>7</sup>. In addition to this, railway managers have often been encouraged to give priority to technical achievements, while the commercial aspects of services were often been ignored. As a result managers have often remained oblivious to accumulating deficits and escalating debt.

**Box 1.1. Labour Productivity in Selected Railway Organization of the ESCAP Region**

| Countries          | TU per employee |
|--------------------|-----------------|
| Japan              | 1,463,838       |
| Russian Federation | 1,088,048       |
| China              | 1,060,891       |
| Kazakhstan         | 820,890         |
| IR of Iran         | 738,597         |
| Thailand           | 548,539         |
| India              | 434,125         |
| Malaysia           | 369,833         |
| Pakistan           | 241,885         |
| Viet Nam           | 116,567         |
| Bangladesh         | 119,159         |

**Source: World Bank Database (1999 figures)**

<sup>1</sup> *Transport Pricing and Charges for Sustainable Development: Principles and Issues*. 2001. UNESCAP. Bangkok.

<sup>2</sup> "SRT presses for state financial help", Bangkok Post, 1 October 2001.

<sup>3</sup> "Revitalization planning on Indian Railways", Rail International, June 2003, p. 30.

<sup>4</sup> The most common measure of labour productivity is Traffic Units (the sum of passenger-km and Tonne-km) per employee.

<sup>5</sup> For any given railway system, 'traffic units' are the sum of net-ton km and passenger-km.

<sup>6</sup> Figures extracted from the World Bank database at: [www.worldbank.org/transport/rail/rdb.htm](http://www.worldbank.org/transport/rail/rdb.htm).

<sup>7</sup> Any conclusion that the railways are poor performers must, however, be mitigated by the fact that on many railways a number of staff still performs non-core activities, typically being occupied in the management of medical, educational and housing services that would more logically fall within the jurisdiction of health or education ministries or government agencies.

**Table 1.1. The Problems of Railways**

| <b>Railway Problems</b>  | <b>Typical Causes</b>   |
|--|---|
| [1]<br><b>Chronic Financial Deficits.</b>  | Constraints on charges imposed through Government regulation; Persistent excess capacity; Provision of guaranteed service levels at fixed prices or with 'excess' competition; Provision of services at below marginal cost; Failure to understand or identify costs; Ineffectiveness in collecting revenues; Low productivity; Unduly high operating costs; Overmanning. |
| [2]<br><b>Growing Operating Subsidies.</b>   | Chronic financial deficits; Lack of 'corporatization'; Inadequate distinction between roles of government and of the railway operator; Inadequate subsidy policies.   |
| [3]<br><b>Archaic Pricing Structures.</b>  | Prices are not related to marginal costs; Costs not properly identified or measured; Inadequate financial and management accounting systems; Inadequate or non-existent pricing objectives or statements of pricing policy.   |
| [4]<br><b>Lack of an Equitable Fare Structure and Excessive Fares.</b>   | Lack of user or community representation in service and price decision making; Public or private monopoly.  |
| [5]<br><b>Excessive costs; Low managerial and technical efficiency; Low Productivity.</b>                                    | Lack of competition or existence of a 'natural' monopoly; Over-manning; Lack of investment.   |
| [6]<br><b>Low service quality; Congested services; Services have failed to respond to need.</b>                              | Lack of competition; no peak-load pricing; Inadequate cost recovery in pricing policies; Inability to reinvest operating surpluses or raise funds for investment.   |
| [7]<br><b>Deficiencies in the physical infrastructure; Insufficient investment funding; Assets have not been maintained.</b> | Failure of pricing policies to recover capital costs; Structural inability to retain/reinvest surplus funds; Regulations preventing investment or borrowing.  |
| [8]<br><b>Widespread state ownership of railway infrastructure and services; Low Private Sector participation.</b>           | Lack of policy or strategic commitment to competition/corporatization/privatization.  |

In many railways priority has often been given to administrative orthodoxy, technical innovation and competent operation which has resulted in a lack of awareness of market realities. Over time, (as will be shown in subsequent chapters), market shares for railways the world over have declined significantly and debt levels have grown. (Box 1.2 illustrates the financial situation of Japanese National Railways at the time of privatization.) In this context, the mismatch between train operations and customer's preferences for a wider range of services could no longer be ignored. In addition, governments, in developed as well as in developing countries, are beset by a host of other demands such as calls for better education, improved health services, efficient social safety nets, law and order, and national defence. Clearly, for governments, the overall bill to be paid each year for operating railways and the financial demands arising from other requirements essential to the proper functioning of society has become too high. This financial burden when combined with a growing dissatisfaction in the quality of railway services by customers with a wider range of transport options, has naturally led governments to withdraw financial support for their railways. The resulting dilemma for railways of the region was referred to as the "*vicious circle of railway underfunding*" in a ESCAP 1998 study<sup>8</sup>. This in turn leads to a deterioration in the condition of track, bridges, signalling systems, and of locomotive and rolling-stock fleets, resulting in high rates of equipment failure and the imposition of increasingly stringent speed restrictions on tracks and bridges, in order to arrest the decline in physical standards. The market response to falling standards of service is a withdrawal of business and reduced traffic volumes, leading successively to: **(i) declining revenue; (ii) further widening of the financial deficit; and (iii) further reductions in the railway budget.** In this way, the *vicious circle* is completed<sup>8</sup>.

#### Box 1.2. Japanese National Railways (JNR)

In 1986, the year before privatization, JNR's deficits totalled Y 15.5 trillion with loans of over Y 25 trillion, larger than Mexico's external debts<sup>1</sup> and by 1987, JNR's total indebtedness amounted to Y 37.2 trillion<sup>2</sup>.

Sources: <sup>1</sup> Eiji Hosoya, "Privatization – Background and Future", *Japan Railway and Transport Review* (March 1994). <sup>2</sup> E. Aoki, M. Imashiro, S. Kato, Y. Wakuda, "A History of Japanese Railways, 1872-1999" (2000)

### Section III

#### The Problems Arising from the State Ownership of Railways

State enterprises are not necessarily technically inefficient. For example, in many ways the performance of Chinese Railways matches the best in the world. However, the problem is that as long as they have recourse to deficit financing to maintain supply, railways have little incentive to be cost-effective or to respond flexibly to changes in user demand. Interference, from the government on matters relating to railway day-to-day operations, has often led to the railway enterprises having poorly defined goals and relatively passive management unlikely to respond to changing market conditions. This has had three important consequences:

- (a) assets have not been adequately maintained - attempts to offer mobility to low-income segments of society by keeping rail fares at uneconomically low levels have often led to the physical deterioration of the rolling stock due to a lack of funds for new investment;

<sup>8</sup> "Marketing the Railway Product in the Asia and Pacific Region", UNESCAP, New York, 1998.

- (b) service has failed to respond to need - protected monopolies usually fail to respond to new demands for expanded services or improved quality; and
- (c) transport costs have been too high – in Argentina, the privatization of the railways demonstrated that labour costs were more than double those necessary for the maintenance of a financially viable system<sup>9</sup>.

The most common structure for the rail sector, over the last fifty years, in most countries was that of a single state-owned firm, entrusted with the unified management of both the infrastructure and the rail services. Typically railway *infrastructure facilities* (rights of way, track, terminals and associated traffic management) have, until recently, been provided by the public sector. In addition, the provision of railway *services* (the conveyance of passengers and freight), have also been a public sector monopoly. Indeed, the same entity has usually been responsible for both the *railway infrastructure facilities and train services*. State-owned railways have therefore often been organized as *vertically-integrated publicly owned monopolies*.

The provision of railway infrastructure facilities and services by state-owned enterprises, with restricted entry to the market, was widely believed to facilitate the achievement of multiple government objectives, by increasing government leverage in policy implementation. For example, it had been widely assumed that public monopolies required price and service regulation to protect the public interest. In addition, there was often an obligation placed on the state-owned railway companies to meet any demand at such regulated prices and changes to route networks and services usually required government approval. In general, governments have often attempted to secure, in the railway sector, objectives in one or more of the following areas, often simultaneously:

- to maintain low and affordable fares;
- to achieve cost and price minimization;
- to fulfil public service obligations particularly to poor or deprived areas;
- to co-ordinate services and integrate route systems;
- to achieve through ticketing between alternative routes, operators, and modes of transport;
- to co-ordinate the scheduling of railway services;
- to achieve multi-modal co-ordination;
- to provide centralized service and fare information systems;
- to maximize safety in railway operations;
- to protect the environment by diverting passengers from road transport; and
- to improve the quality of railway service.

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<sup>9</sup> Estache, A., Carbajo, J.C., Rus. *Argentina's Transport Privatisation and Re-Regulation*. 1999. Policy Research Working Paper 2249. World Bank. Washington.

However, it has become recognized increasingly that monopoly *per se* is unlikely to contribute to ensuring sufficient, low cost and "affordable" transport. For example, in the absence of subsidy, the imposition of an obligation on operators to provide uneconomically low fares may actually accentuate poverty by reducing the availability and quality of train services. Further, addressing the debt issue calls for decisive actions aimed at: (i) dealing with accumulated past debts; and (ii) ensuring that the structure of the new railways will prevent the situation from recurring. In this regard, two essential requirements are a fundamental shift in the driving philosophy of railway organizations and a major change in the attitude and expectations of governments with respect to the future role of their railway organizations. It means doing away with the long-standing contradiction between requiring railways, on the one hand, to become commercial organizations, and on the other, to continue, without explicit subsidy, the provision of loss making social services. (See box 1.3 for an example of this contradiction in India.) Similarly, it is now widely recognized that it is better to address environmental impacts directly with the relevant technical or operating standards or taxes, rather than to approach them indirectly through the control of market entry. The pursuance of such social objectives has inhibited the ability of railways to act commercially. Competition has been rare and often discouraged. Due to this protective environment, most national rail companies incurred growing trading deficits during the 1970s and 1980s.

### Box 1.3. IR as a Tool to Serve Social and Economic Development Objectives

On the one hand Indian Railways are expected to function like a commercial organization while on the other hand it has been used successively as an economic and social instrument of policy. Railway movement has been used as a social safety net and an economic stabilizer. Rail tariffs have been used to combat inflation. Regional development policies and subsidies to internal commodity markets have been effected through rail prices. All these diminished the competitive advantage of the Railways and undermined its financial viability.

Source: Sanjay Chadha, "Revitalization planning on Indian Railways", in *Rail International*, June 2003

**Table 1.2. Key Reasons for the Failure of State-Owned Railways**

- **Misguided Intervention** – whereby Governments, for example, have often imposed unsustainable fare and service conditions, overestimating what can be accommodated through internal cross subsidy.
- **Excessive Operating Costs** – often arising from a combination of over-staffing, operational inefficiency, and poorly targeted capital investment. In addition, railways have often had to bear track and infrastructure costs which have not been borne by operators in other competing transport modes especially road transport operators.
- **Perverse Management Incentives** – where, for example, entry to the rail sector is restricted, fares and freight charges are usually controlled to limit the rate of return on capital. This has led to the "padding out" of costs by excessive capitalization; the unwillingness to pool resources such as terminals; an unwillingness to lease; the use of more expensive equipment and earlier vehicle replacement than a competitive market would support; and, excessive vertical integration.
- **Lack of Dynamism** – for example, strict entry regulation excludes or limits the possibility of providing innovative forms of lower cost rail transport which meets the transport demands of the poorer groups or higher quality alternatives meeting the needs of those willing to pay.

Thus, the main problems associated with the state ownership and operation of railways are:

Furthermore, social obligations to their staff made it nearly impossible to reach any agreement on redundancies or even wage adjustments. In some countries, the companies were forced to finance their deficits by borrowing, so that their accounts came to lose all resemblance to reality. In consequence state-owned railways are now widely regarded to have failed. A number of reasons for this failure are set out in table 1.2.

It can be argued that the best way to align consumer needs and demand, with the provision of railway services, in a manner which promotes economic and financial sustainability is through competition. Policymakers in many countries have concluded therefore, that the solution to this myriad of problems is likely to be found in creating a competitive ‘market based’ railway industry<sup>10</sup>.

#### **Section IV Creating Competition in the Railway Industry**

Evidence suggests that substantial cost savings can be achieved by creating competition and private participation in the supply of the railway infrastructure facilities and train services. Many countries are therefore seeking economic reforms aimed at creating a competitive market-based transport industry. The critical weakness of the traditional way of providing transport facilities and services has been the absence of any structure of incentives to align the interests of the supplier with the public need. It is now widely felt that the potential loss of patronage, earnings and, ultimately, employment resulting from a failure to respond to consumer demand in competitive markets, is the most powerful means to force suppliers to respond to consumer requirements. Indeed, Beesley<sup>11</sup> argues that competition is the most important mechanism for maximising consumer benefits, and for limiting monopoly power. Its essence is rivalry and freedom to enter a market. Competition serves the public interest by inducing suppliers to become more efficient and to offer a greater choice of products and services at lower prices. When competition exists in market-based economies, two or more different suppliers compete with each other to sell their goods or services to customers. Competitive suppliers may offer lower prices, more or better quality of service to attract customers. In a competitive market, individual suppliers lack “market power”.<sup>12</sup> They cannot dictate market terms, but must respond to the rivalry of their competitors in order to stay in business. The existence of competitive threats and rivalry amongst both existing and potential suppliers will increase the contestability of a market across all its dimensions including – price, quality and innovation. In general, the goal of competition policy is to promote, protect and preserve competition as the most appropriate means of ensuring the efficient allocation of

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<sup>10</sup> Kopicki, R. and L.S. Thompson. *Best Methods of Railway Restructuring and Privatization*. 1995. CFS Discussion Paper Series, no. 111, The World Bank, Washington D.C.

<sup>11</sup> Beesley, M E. 1 997. *Privatisation, Regulation and Deregulation*. Routledge. London.

<sup>12</sup> ‘Market Power’ is generally defined as the power to unilaterally set and maintain prices or other key terms or conditions of sales; that is, without reference to the market or to the actions of competitors.

resources<sup>13</sup>. In consequence, the railway industry in many countries, has been subject to a range of economic and structural reforms designed to create competition. These reforms involve introducing, to varying extents competition and private participation in the financing, operation, management and possibly although not necessarily, the ownership of the railways. Indeed, the railway industry is now being transformed from being a poorly managed public utility with mounting financial losses to an efficient market-oriented industry with a more commercial outlook.

## Section V

### The Economic Reform of the Railways and its Rationale

In recent years, the need to create better managed, more commercially-responsive and market-led railways has been widely recognized. In consequence, many countries have introduced economic reforms designed to improve the operational and financial performance of national railways.

The rationale for the economic reform of the railways, in many countries, arises from the search for solutions to the myriad of problems faced by them. In essence the reasons that underlie the need for railway restructuring are that:

- governments find railways costly to operate;
- the institutional arrangements regulating the relationship between owner governments and their railway organizations prohibit the emergence of business reactions among railway managers and, consequently, an improvement in financial performances;
- railways have been losing market share to their competitors, mainly road transport, and in many instances are patronized by ‘captive’ customers for whom railway is the only option; and
- there is an increasing recognition, by many governments, that railways should be retained and developed as an important component of the transport system.

Such economic reforms, often described as ‘railway restructuring’, have involved the creation of new organizations; revised accounting methods; liberalization through the introduction of competition; privatization, de-monopolization and regulatory reform. More specifically, a well planned restructuring process involves transforming railway organizations into enterprises with the characteristics listed in table 1.3.

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<sup>13</sup> The degree of competition or rivalry in a market or sector will depend on various factors including its structure and the behaviour of firms. At one extreme, highly competitive markets are characterised by a multiplicity of small firms competing on all aspects of price and quality. At the other extreme, monopolistic markets exist when production is concentrated in a few firms with the possibility of open or tacit collusion amongst them on matters such as price, output and the quality of provision.

**Table 1.3. Sound Railway Restructuring Aims to Create**

- An unambiguous division of responsibilities between the owner governments and their respective railway organizations.
- Management teams that are allowed to manage their railways as businesses, i.e. with freedom to make commercial decisions affecting bottom-line results, i.e. revenues, costs and returns on investments.
- A corporate culture that is less production-oriented and more market-minded and customer-oriented.
- Financial viability allowing the railways to operate without funding from governments other than compensations for 'Public Service Obligation' (PSO) services.
- A streamlined core-network tailored to serve commercially-attractive traffic and integrated with other modes (e.g. ports) in order to minimize overall transport costs.
- The accomplishment of business-related activities generating revenues mainly from core train operations and with reduced reliance on non-railway activities as a source of income; a well-trained and highly-motivated workforce able to achieve increased productivity.

## 2

### *Alternative Models and Methods of Railway Restructuring*

#### **Introduction**

The factors which adversely affect the performance of railways seem to be common to most railway organization. Changes in the transport market have diminished the competitive advantage of railways, in many countries simultaneously. Indeed the extent of competition from other modes of transport has raised the basic issue of the continued viability of railways in some countries. However, experience in Europe has demonstrated that railways are viable even in direct competition with non-rail private transport service providers equipped with modern technology. A number of different approaches to railway restructuring have been adopted, particularly in Europe.

On the basis of European experience, this chapter analyses the three main dimensions to railway restructuring decisions, namely:

- (a) the vertical organizational structure in terms of the degree of separation between railway infrastructure and railway services;
- (b) the nature and extent of competition to be created; and
- (c) the extent of private sector participation.

This chapter also identifies, on the basis of European experience, alternative models of railway restructuring (including the technicalities of the processes involved) and their applicability implications for ESCAP member countries.

#### **Section I Restructuring – The Main Dimensions**

The railway industry is undergoing a transformation in many countries from being a poorly managed public utility in decline with mounting financial losses to a more efficient market-oriented industry with a more commercial outlook and increased competition. In practice, there are three main dimensions that define the nature of the various restructuring schemes that have been applied in recent years and these are set out in table 2.1.

**Table 2.1. Railway Restructuring - The Main Dimensions**

➤ **Vertical Structuring**

This refers to the extent, if any, of vertical separation between the organizations responsible for railway infrastructure on the one hand and for train services on the other.

➤ **Private Sector Participation**

This refers to the extent, if any, of private sector participation in the provision of railway infrastructure and/or services.

➤ **Degree of Competition**

This refers to the extent to which there should be competition either 'for the market' or 'in the market' in the railway industry.

In order to consider the alternative approaches to railway restructuring it is important to understand the economic characteristics of the railway industry.

The main characteristics of railways that determine the applicability of restructuring and its alternative forms include:

- **Multiple-Products** – Railway service providers are multi-product in nature since most firms provide both freight and passenger services. However, freight services are not homogeneous since they may comprise of trainloads of bulk freight, or break-load services of wagonloads, or parcel and postal services, as well as other services of inter-modal transport. In the case of passenger transport, long-distance traffic usually coexists with local services (suburban and commuter trains), regional services, and even with high-speed trains on certain corridors or routes.

There are a number of implications arising from the multi-product nature of rail services. Firstly, it is difficult to allocate total operating costs among the different services offered due to the existence of costs that are joint or common to several rail users. Secondly, it may be more efficient for a single firm, rather than two separate firms, to supply both infrastructure and transport services and further, if the infrastructure and services are separated, the supply of such services may be more efficiently provided by a monopolist, rather than by competing firms.

- **Cost Structure**

Railways costs are often classified into four broad cost categories:

- (a) train operating costs which, in general, vary with train mileage and include the costs of providing transport services (fuel, crew, maintenance and the depreciation of rolling stock);

- (b) track and signalling costs (including the operation, maintenance and depreciation costs of the infrastructure) which usually vary with the length of the route and the number of trains for which railpaths are required;
- (c) terminal and station costs which depend on the traffic volume, but they vary considerably with the type of traffic; and
- (d) administration costs which tend to vary with the size of the firm.

Cost allocation is therefore a complex matter and policy-makers usually adopt marginal-cost pricing principles and attempt to make a clear distinction between costs that are avoidable and those that are not. Since avoidable costs are uniquely allocable to specific traffics or users they represent a floor for regulated fares and freight tariffs, since charging less than the avoidable cost would be equivalent to operating at an economic loss. In attempting to re-structure the industry it is important to develop pricing systems that facilitate access to the rail network on an efficient and fair basis.

#### ➤ **Railway Infrastructure is a ‘Natural Monopoly’**

The prominence of infrastructure costs in the railway industry leads to significant economies of scale. Indeed, these have been so significant that the provision of rail transport services was typically regarded as a classic example of a natural monopoly. In recent years, however, it has been argued that whereas duplicating rail infrastructure is generally inefficient, the cost of operating rail transport services and rolling stock once the network has been deployed can be efficiently provided by more than one company, which can be viewed as actual or potential competitors. Therefore, in restructuring, it may be concluded that infrastructure and services can be dealt with in different ways, the former, as a natural monopoly, but also as a potential provider of access for the operators of train services. The operation of train services on the infrastructure, however, can be provided either by multiple competing operators or by a single firm under some sort of concession or license arrangement. The former represents ‘competition in the market’, the latter ‘competition for the market’.

#### ➤ **Indivisibilities**

Although the potential vertical separation of the industry can alleviate some of the natural monopoly problems, the rail industry remains a very capital-intensive sector which is subject to several other indivisibilities within its productive process. Specifically, the capital units (rolling stock, track and stations) can only be expanded in discrete or indivisible increments, whereas demand may fluctuate in much smaller units. Consequently, increases (decreases) in demand could clearly exceed the feasible increases (decreases) on the supply side, thus resulting in either excess or under-capacity. This ‘lumpiness’ of rail transport facilities has several important implications for investment and pricing. For example, the marginal costs of additional freight or passengers may be insignificant when there is idle capacity, but may be substantial when the capital is at the limit of its full use. Therefore, dynamic price and output considerations become crucial in order to recover the real costs associated with each period of activity. Such indivisibilities affect the minimum scale of efficient operation in planning any restructuring.

### ➤ **Public Service Obligations**

Rail services are often controlled for the reason that they are perceived as a public or social service, to be provided irrespective of financial viability. The reason for such control is because the industry is regarded as an integrative mechanism able to overcome geographical barriers in certain areas, aid in the economic development of undeveloped zones, and even as a guarantee of minimum transport services for a particular segment of the population. Public service obligations on rail firms in the form of the compulsory provision of unprofitable routes or services need to be addressed by policymakers when implementing economic reforms aimed at commercialising the industry.

### ➤ **Externalities in Competing Modes**

The policy goal of public service obligation is often supported with the idea that rail transportation contributes less to the rise of negative externalities than other modes of transport, especially road transport. There is abundant empirical evidence showing that the external costs derived from congestion, accidents or environmental impact (noise, visual impact, pollution, etc.) could be reduced if a substantial part of the road traffic market were transferred to the railways. This inter-modal externality arises from the fact that road transport does not fully internalize all the social costs that it generates and economists often recommend the use of congestion and/or pollution taxes, for example, to take this into account. However, when these mechanisms are not feasible or politically viable, it might be preferable to lower rail fares in order to obtain an overall improved inter-modal balance. These principles should also be considered when defining the appropriate structure for the rail industry.<sup>14</sup>

The structural requirements of railways, in any given situation, will depend on its economic characteristics and its performance.<sup>15</sup> Table 2.2 provides a summary of the main economic characteristics of railways and their implications for restructuring.

| <b>Table 2.2. A Summary of the Economic Characteristics of Railways</b>   |
|---|
| <p><b>Economic Characteristics and their Implications for Restructuring:</b></p> <ul style="list-style-type: none"> <li>➤ <b>Railways are a Multi-product Activity:</b> <ul style="list-style-type: none"> <li>☐ Accounting problems need to be addressed where services are differentiated.</li> <li>☐ Coordination of decisions is required under vertical separation.</li> <li>☐ Integrated or differentiated management.               <ul style="list-style-type: none"> <li>- between infrastructure and the services?</li> <li>- between different rail services?</li> </ul> </li> </ul> </li> </ul> |

<sup>14</sup> Campos, J. and Cantos, P. *Railways in 'Privatisation and Regulation of Transport Infrastructure'* Estache A. and de Rus G. 2000. World Bank. Washington.

<sup>15</sup> Kessides, I.N. and R.D. Willig. *Restructuring Regulation of the Rail Industry for the Public Interest*, 1995. Policy Research Working Paper 1506, The World Bank, Washington D.C.

- **Structure of Rail Costs:**
  - ☐ Problems in the definition of rail costs.
  - ☐ Problems in cost allocation to different operators.
  - ☐ Implications for pricing policies need to be established.
- **Role of Infrastructure:**
  - ☐ Optimum size of railway operations needs to be determined.
  - ☐ Separation between infrastructure (with characteristics of natural monopoly) and operations (competitive market) needs to be considered.
  - ☐ Infrastructure access fees need to be established.
- **Indivisibilities:**
  - ☐ Problems implementing optimal price and service levels need to be addressed.
  - ☐ Dynamic price policies are required.
  - ☐ Investment policies are required.
- **Public Service Obligations:**
  - ☐ Financial problems arising from cross-subsidization, need to be ended.
  - ☐ Definition of price and service levels through explicit contracts is necessary.
- **Externalities:**
  - ☐ Implications on (social) optimum prices needs to be evaluated.
  - ☐ Externalities such as congestion; accidents; pollution; and, energy waste need to be assessed.
  - ☐ Inter-modal implications need to be assessed.

## Section II

### Methods of Vertical Structuring

It is possible to distinguish between three different options for the vertical structuring of the railway industry:

#### (a) Vertical Integration

This is the most common structure in the industry. Typically, railway infrastructure facilities (rights of way, track, terminals and associated traffic management) have, until recently, been provided by the public sector. In addition, the provision of railway services (the conveyance of passengers and freight), have also been a public sector monopoly. Indeed, the same entity has usually been responsible for the railway infrastructure facilities, train services and administrative functions. State-owned railways have, therefore, often been organized as vertically-integrated publicly owned monopolies.

#### (b) Competitive Access

Competitive access is characterized by the existence of an integrated operator, usually a public enterprise, which is required to make its rail facilities (network and terminals) available to other operators on a fair and equal basis through the trading of, for example, circulation rights. It is possible to distinguish between Competitive Access with a 'dominant integral' operator and situations where Competitive Access is operated with a 'separated integral'. In the latter case the infrastructure owner operates trains through a separate division on the same

commercial basis as other operators. Competitive Access keeps the advantages of integration in terms of economies of scope, coordinated planning and reduction in transaction costs. However, if the integrated company has incentives to leave out other operators, the overall effectiveness of the system may be doubtful.

**(c) Vertical Separation or ‘Unbundling’**

In a vertically separated structure, the ownership of facilities is fully separated from other rail functions and specifically, train operations and marketing. This form of restructuring is very attractive because rail infrastructure, which remains characterized by natural monopoly conditions, is separated from rail operations, where there is potential for competition among different operators. In railways, separation can begin with merely keeping the accounts for infrastructure, but it can extend to having different entities to own, provide and control the infrastructure, and an entirely independent set of operators.

Vertical unbundling has the benefit that it places rail transport in a similar situation to road transport, especially with regard to infrastructure planning and pricing. Hence, governments could study investment proposals on the basis of a cost-benefit analysis, while pricing policies could be based on the criterion of social cost. An important problem here lies in the difficulty of defining the social cost of railway infrastructure use. The determination of the marginal or incremental costs of the use and wear and tear of one additional train is not, in principle, any more difficult than the equivalent calculation for road transport. The problem, however, becomes more complicated for the railway when this cost is evaluated in a congested environment. In addition, separation of infrastructure from services greatly facilitates the entry of more than one operator on a single route. In profitable services this would permit notable improvements in the efficiency of the industry by allowing direct competition among operators, and thus eliminating monopolistic practices in the sector. In non-profitable services, infrastructure separation can be accompanied by tendering, thus stimulating increased efficiency through competition for the market, the introduction of innovations, and a clear improvement in marketing. However, the main problem with vertical unbundling is the potential loss of economies of scope derived from the joint operation of tracks and services. It is often pointed out that the relationship between the services supplied and the rolling stock used, as well as the quality, quantity and technical characteristics of the infrastructure, is so close that both aspects need to be planned together. Thus, the assignment of different services to several operators may imply a lower utilization of the staff and physical assets of the sector. Other problems include that the lack of integration may be confusing for the user and expensive to administer in a legal sense. Finally, the process of vertical separation of infrastructure and services may also lead to a reduction of investment incentives for firms or the agency managing it the system.

EU Directives 91/440/EEC, 95/18/EC, and 95/19/EC specify the necessity for separate accounting for infrastructure and operations as the minimum reform; the directives do not actually specify splitting infrastructure and operations into two or more separate business entities. In consequence, EU Member States have adopted two distinct methods of to achieve the requirement.

### **(a) Institutional Separation**

This method separates the infrastructure and railway operators into autonomous entities with separate capitalization, balance sheets and staff. The infrastructure can be publicly owned as in Portugal (The Portuguese Rail Infrastructure Authority, REFER) and Sweden (Banverket, BV) or privately owned as in the United Kingdom (Network Rail, formerly Railtrack). Even when the infrastructure owner is publicly owned, it is required to operate under normal rules and laws governing commercial businesses. In most EU countries a government appointed regulator mediates disputes between the infrastructure owner and railway operators.

France has adopted this form of separation in the sense that the infrastructure manager (RFF) and the operator (SNCF) are completely separate legal entities with separate staff, but the relationship is closer than in the United Kingdom because SNCF actually operates and maintains the infrastructure based on contracts awarded by RFF. In Finland, the infrastructure manager is the Finnish Rail Administration (RHK) a department of the Ministry of Transport and Communications. Railtrack was the only example of a genuinely privatized infrastructure. However, a series of fatal accidents and serious infrastructure maintenance problems led to its replacement by Network Rail, a ‘not-for-profit’ company limited by guarantee.

Profillidis<sup>16</sup> suggests that so far the Finnish and French models have avoided the problems of the United Kingdom model.

### **(b) Organizational Separation**

This method creates separate business units with a large degree of operational freedom. Belgian National Railways (SNCB/NMBS) and Italian Railways (FS) have independent management and separate balance sheets but no legal autonomy. In Germany, however, the business units of DB Reise Touristik, DB Reigo, DB Cargo, DB Netz, and DB Station & Service, have been developed into autonomous business units under the holding company DB AG.

The issue of vertically separating railway infrastructure from railway services is a controversial one. Table 2.3 sets out the main benefits of vertical separation and integration.

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<sup>16</sup> Vassilios A. Profillidis. *Separation of Railway Infrastructure and Operations*. Japan Railway and Transport Review 29. December 2001.

**Table 2.3. Vertical Integration versus Separation**

**The Benefits of Separation include:**

- **Cost Reduction;**
- **Creation of Intra-Rail Competition;**
- **Increased Focus on Services;**
- **Clarification of Public Policy; and**
- **Balance Sheet Improvements;**

**The Benefits of Vertical Integration include:**

- **Cost Minimization through Reduced Expenditure on Co-ordination Efforts;**
- **Improved Ability to Respond to Intra-Modal Competition;**
- **Optimization of Train Operation on the Network;**
- **Promotes Technical Innovation and its Implementation; and**
- **High Safety Standards.**

Thompson<sup>17</sup> argues that there are several reasons for separating railway services from infrastructure operations. The first is to reduce unit costs. The more traffic a railway network carries, the lower is the unit cost. A railway can often allow a new operator on a line at a charge higher than its added costs, but far lower than the cost to the tenant operator of providing its own facilities. The second reason is to create intra-rail competition as envisioned by the European Commission (EC), through its Directive 91-440. In fact, it is because of a fear that the publicly owned infrastructure agency would create problems for the tenant railway (particularly when the tenant competes with the owner's services), that the European Commission and most European railways are moving toward institutional rather than organizational or accounting separation in order to ensure the neutrality of the infrastructure provider. The third reason is to improve the focus on the services provided. It is suggested that when railway operators face severe competition from often subsidized road transport in a number of market sectors it is sometimes better to create separate companies to increase commercial and managerial focus in specific markets. This applies particularly where unprofitable services are to be provided under government subsidy policies for PSO's. The fourth reason is to clarify public policy. In Sweden, for example, the government wanted to pinpoint its support for social objectives and to ensure competitive balance in public support for transport. By separating rail infrastructure from operations, the government could target its support in a way that compensated railways for the support to highways and allowed it to cover the social costs of the environmental impact of different transport modes. The government can now tell what it is paying for and support only what it intends to. Infrastructure separation can also help improve the balance between the public and private sectors.

<sup>17</sup> Louis S Thompson. *The Benefits of Separating Rail Infrastructure from Operations*. Public Policy for the Private Sector. Note No. 135. December 1997. World Bank.

Thompson states that defensible arguments can be made that the public sector should plan and ensure the provision of essential transport infrastructure. But as long as the dogma of the monolithic railway prevails, public agencies—supported by the public treasury—also must conduct rail operations. Separating infrastructure allows the conundrum to be broken: critical infrastructure can continue to be publicly planned and provided, but rail services can be provided by either public or private agencies. In addition, mixed solutions become possible, with the public sector operating some services (say urban transport) and the private sector operating others (freight).

The vertical separation model is not without its critics. Pfund<sup>18</sup> suggests firstly that because railway infrastructure is also its traffic control system it is an essential factor of production. Railway traffic is the final value-added arising from a series of inter-linked activities comprising station servicing, network provision and signaling, and the train services which need to be coordinated to provide an optimal and marketable product. It is argued that vertical separation leads to sub-optimization and that an integrated, closed system under a homogeneous management is required to achieve the simultaneous and comprehensive optimization of the system as a whole. Secondly, Pfund states that system optimization leads to cost minimization which enables railways to compete with other modes of transport. Thirdly, the vertical integration of operations and infrastructure, it is suggested, guarantees that decisions concerning infrastructure investment are driven by the market. In this regard, integrated rail operators can make comprehensive decisions about system maintenance and development with reference to demand requirements. Similar arguments are applied to vertically integrated railways being best placed to guarantee a high standard of safety.

### **Section III**

#### **Methods of Introducing Competition**

The provision of railway networks is naturally monopolistic but the provision of services over the networks is potentially competitive. A competitive environment can be created in a variety of ways.

- (a) **Competition ‘in the Railway Market’:** this occurs where there is no restriction on entry by firms to the railway system subject to meeting safety regulations.
- (b) **Competition ‘for the Railway Market’:** where entry to the railway network is restricted, it is possible to organize competition for the right to service individual routes, or for the sole right to provide a whole network or to undertake particular functions as a subcontractor to a monopolist network or train operator.

Since there are significant barriers to entering the market for railway services and the efficient scale of operation is large relative to the market, it is relatively difficult to create ‘competition in the market’. One possible way forward is to create ‘competition for the market’ which can be described as developing private operations within a framework of public regulation and control. Creating “competition for the market” is a means of obtaining improvements in the efficiency of a monopolist. This form of competition is

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<sup>18</sup> Carlo Pfund. *Separation Philosophy of the European Union – Blessing or Curse?* LITRA. 2002. Bern.

created by organizing an auction to force the potential monopolists to compete with each other for the right to be the single supplier of a rail network or train service.

Competition in service provision can be effected through the selling of route franchises for both profitable and unprofitable railway routes. Regulation over safety, service quality, and, prices can be retained whilst using competition to secure the lowest cost operator for a fixed time period. Further, introducing different operators on the same or competing routes and maintaining competition with alternative modes can produce significant benefits.

The creation of competition in railway infrastructure provision is more problematic. The competitive award of long-term concessions; licences; or, leases of facilities such as stations and permanent way is the primary means for introducing market forces into the provision and management of railway infrastructure. This can be structured with the objective of stimulating efficiency by transferring risk to the private sector. The effectiveness of railway infrastructure concessions depends on the skills of governments in designing and implementing contracts. Auctioning concessions to the highest bidder will give an incentive to the most cost-efficient and market oriented operators but is likely to provide the successful firm with a monopoly position. The alternative is to invite bids on the basis of the lowest price for a specified quality of service to be provided. This will require a high degree of sophistication in bid evaluation. There is scope for introducing private sector financing and funds into the building and maintaining of railway infrastructure by allowing them to assess and retain income flows from train operators, who themselves may or may not be in receipt of government subsidies. To some extent therefore it is likely that private sector participation in railway infrastructure provision is going to involve some form of private sector-public sector partnership.

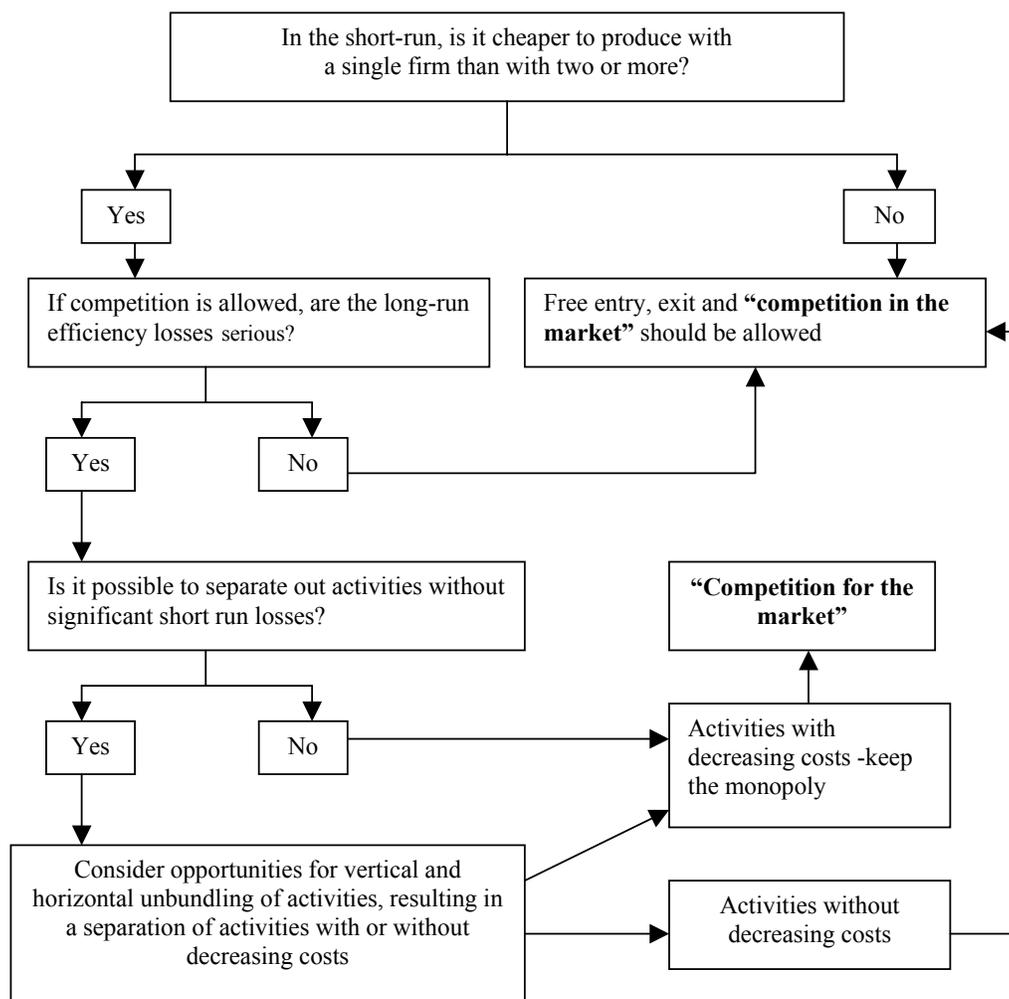
“Competition in the market”, without barriers to entry, is appropriate for the provision of railway services where the size of the market is large in comparison to the minimum efficient scale of operation and several suppliers can operate concurrently at an efficient scale. This is likely for bulk freight rail services and possibly inter-city and high-speed passenger services.

Estache and de Rus<sup>19</sup> have developed a structured decision framework to assess what type of competition is desirable, according to the degree of technical integration of the activity and the desirability of allowing it to be provided by a monopolist – see figure 2.1.

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<sup>19</sup> Estache A and de Rus G. *Privatisation and Regulation of Transport Infrastructure: Guidelines for Policymakers and Regulators*. 2000. The World Bank. Washington, D.C.

**Figure 2.1. Alternative Forms of Competition for Railways**



Policy Makers must decide how far to go in re-structuring railways and choose the most appropriate form of competition for each element of the industry. The unbundling, or the vertical and horizontal separation, of activities can effect this. Basically, if it is cheaper and technically feasible to have more than one provider, in both the short and long run, then “competition in the market” can be created. In such circumstances regulation is usually confined to ensuring that service providers meet their social or public service obligations and that government compensate them as necessary. The competition authorities, and possibly the regulatory bodies, will also have responsibilities for ensuring that the competitors do not individually or collectively engage in any anti-competitive behaviour. Regulation of the activities and pricing decisions of the residual monopolies is a key feature of competition policy. Competition for the market, in the remaining natural monopoly activities, allows the state to achieve up-front efficiency gains.

In summary, ‘competition for the market’, where the economic characteristics of the market make ‘competition in the market’ infeasible can be very effective. ‘Competition for the market’ is preferable either, where economies of scale rule out multiple entrants or where the market is not financially viable and the objective is to

minimize the subsidization to the railways, by the government. In these circumstances, the rail services that are required are defined in terms of the required service frequency, quality of service, maximum tariff allowed and investments required and then the service is offered for competitors to bid based on either the maximum fee (rental bidding) or the minimum subsidy payment by the government. One serious problem with rental bidding is that it provides an incentive for franchisees to charge inappropriately high (monopoly) prices. The reason is that, to win a franchise, a firm must offer to pay the highest rental, but is not committing itself to charge low prices. Subject to meeting the service requirements, a bidder has to offer as much of its potential profits as possible to secure the franchise. But then it is committed to maximising its profits if it wins. In other words, to maximize the bid that they could make, the franchisees will need to determine prices of rail travel in such a way as to equate marginal revenue and marginal cost. In response, the counter-argument is that, since the government will ultimately be receiving most of the franchisees profits, the situation is not too undesirable after all, particularly if this reduces the size of the subsidy to be paid. The fallacy is that monopoly based prices produce net losses to society which are not reduced by paying taxes in the form of rental bids. A further criticism is that inadequate competition at the bidding stage may well leave substantial profits with the franchisees. Furthermore, it is uncertain whether competition in the form of other operators running or threatening to run services is likely to be sufficient to prevent monopoly pricing.

As previously mentioned, many rail routes make losses. This means that in practice most bidding for franchises takes the form of subsidy bidding. The normal justification for these subsidies is that there are benefits of rail transport beyond those benefits that users of rail transport receive. Governments have not always been very clear as to what the external benefits of rail transport are. Nevertheless, they implicitly recognize their existence. One interpretation of subsidy bidding is that it is designed to ensure the provision of socially desirable rail services at the least possible cost to taxpayers. Minimising the public subsidy to railways is not, however, necessarily a rational objective of government policy. In the case of rail it could be argued that the objective should be to maximize the surplus of external (environmental plus social) plus private benefits over costs. In order to do this an estimate of the environmental and other external benefits of particular rail routes is required. Environmental benefits might include avoided congestion and reduced emissions of carbon monoxide, sulphur and lead, for example. As for wider social benefits, it would be necessary to estimate the value of maintaining mobility of people who could use services under a purely commercial rail system. The explicit valuation of external benefits could then form the basis of a subsidy per passenger offered on a particular route. Further, the mechanism then exists to pursue social and environmental benefits by even subsidising profitable routes in order to ensure lower fares and a more desirable modal split in support of sustainable development.

Finally, Thompson and Budin<sup>20</sup> suggest that, if competition is well designed, ‘competition for the market’ can have the same beneficial effects as ‘competition in the market’. Further they state that, this approach is especially useful for smaller integrated freight concessions and for providing urban and suburban passenger services where the economic benefits are significant in terms of reducing environmental pollution, urban congestion and access for the poor, but fares cannot be made high enough to be financially viable.

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<sup>20</sup> Thompson, Louis S and Budin, Karim-Jaques. *Directions of Railway Reform*. AICCF. 2000.

## Section IV

### Private Sector Participation

Many railway activities traditionally reserved for monolithic public railways can be more effectively performed by the private sector. During the past two decades, the large budgetary demands and failure to improve performance have led many governments to consider increasing the role of the private sector and enhanced competition in their railways. In practice, it is possible to identify a range of different institutional arrangements to facilitate private participation in railway activities.

#### (a) Government Departments and State Enterprises

Many railways (e.g. Bangladesh, China, India, and many of the CEE economies) have been owned and managed directly as government ministries. While such a structure has occasionally functioned well, it is usually severely handicapped by lack of transparency, accountability or incentives for efficient customer orientation. This is especially severe where the railway must cross-subsidize some services (typically passenger, especially suburban) with others (freight), but also competes with private sector carriers, particularly road haulage and buses.

Though not a ministry, the "public enterprise" is another common approach to the public ownership and operation of railways; but even these generally have far less managerial or financial autonomy in practice than on paper. The Polish State Railways, for example, were transformed from a ministry to a state-owned "enterprise" in 1987, but traditionally strong ties with the government have limited the actual change in management style.

The need for greater management responsibility and autonomy has led to the development of more or less formal performance agreements ("contracts") between government and enterprise which specify the objectives, authority and obligations of each. While sometimes successful in developed economies, these agreements have generally proven less effective in many developing countries, often because they lack clarity and the commitment and understanding of all parties. The real value of performance agreements lies in the process of reaching agreement, and the information and understanding that result, rather than in the details of the agreement. Success depends on to the degree to which the railway is expected to act like a commercial entity.<sup>21</sup>

Public enterprise railways almost always lack useful information on the profitability of specific activities and the magnitude of cross-subsidies. They are often production-oriented, with little concern for market requirements and many require large subsidies. In some cases, the "reformed" public enterprise has been corporatized (made into a shareholding company), commercialized (made financially and managerially autonomous), and subjected to normal company law. It may have only limited access to budgetary financing (e.g. to compensate for non-commercial public service obligations), but its investment and pricing

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<sup>21</sup> Galenson, Alice and Thompson, Louis S. *Forms of Private Participation in Railways*. Infrastructure Notes. No. RW-5 World Bank. June 1993. Washington D.C.

policies are often still largely determined by the state as majority owner. One important feature is that regulation (if any) is put at "arm's length," and carried out by an independent agency. Examples are, British Rail (pre-privatization), Japanese National Railways (JNR), and Spanish Railways (RENFE).

The reformed public enterprise is a useful option when privatization is not being considered. Governments which went down this cautious path have focused railway restructuring on the development of a strategic plan; the creation of a government owned joint stock or limited liability company subject to commercial laws and practices; explicit acknowledgement of the railways' commercial orientation; acceptance of the need for only minimal regulation; limiting government support to equity investment and loans (on commercial terms) to the railway along with Public Service Obligation (PSO) payments; establishment of a settlements agency to take responsibility for redundant staff, retraining needs, excessive existing debt, and non-rail activities and assets; organization according to lines of business and cost centres and the implementation of a reporting system for allocating costs and revenues among the lines of business; and divestiture of non-rail activities.

In summary, management efficiency can be increased by corporatising the agencies responsible for the railway infrastructure. The discipline brought about through acquiring a commercial remit with accountability for prices and hence revenue, and expenditure can drive costs down and quality up dramatically<sup>22</sup>.

Privatization clearly does not need to be an objective of railway restructuring. However, recent experience with the vertical separation of railways has allowed new approaches to be considered in meeting public responsibilities.

### **(b) Unbundling and Decentralization**

A key to private sector participation (PSP) in railways is separating or "unbundling" rail transport activities. One example is the separation of the ownership of fixed facilities (stations and the railway network) from operations, as was done in Sweden. While such separation does not require privatization, it can also be an effective way to make public operations more transparent and efficient -it does facilitate PSP. It relieves the railway of its base of fixed assets and long term debt, freeing it to function commercially; permits the establishment of profit and cost centres for improved financial information and accountability; makes the railway structurally more like competing modes; and enhances the opportunities for intra-modal or inter-modal competition.

Decentralization is another way to break up the monolithic railway monolith. This is particularly appropriate for local passenger (i.e. suburban or rural) services, which rarely cover costs, but which local governments may wish to subsidize. Where the transport need is essentially local, decentralization promotes greater

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<sup>22</sup> Galenson, A. and L.S. Thompson. *Forms of Private Sector Participation in Railways*, 1993. Transport, Water and Urban Department Report No. TWU-9, The World Bank, Washington D.C.

accountability and sensitivity and provides opportunities for PSP via contract operation<sup>23</sup>.

**(c) Service Contracts**

Even if still publicly owned, the railway can contract for almost any activity with the private sector. This can be done with infrastructure, wagon, and locomotive maintenance. Such contracts, properly designed, can be made competitive and can incorporate incentives for good performance.

Pakistan Railways contracts out ticket sales and inspection and on-board services for two lines out of Lahore. The contractor pays a fixed rate to the railway and therefore has an incentive to collect as much as possible. This arrangement has reduced the previously high level of ticket-less travel. Other contracted services in Pakistan include luggage handling and parcel service.

In Japan, the Shinkansen (bullet train) right-of-way has been entirely maintained under contract with the private sector, and the maintenance is done more efficiently than on JNR's conventional lines. As a precursor to full privatization British Rail privatized British Rail Engineering (BREL Ltd.), which manufactures and maintains rolling stock in full competition with other companies.

**(d) Management Contracts**

Management contracts range from what is essentially a form of technical assistance, where the management contractor takes no financial risk, to more significant cases where compensation is based at least partly on results, including performance incentives. The contractor assumes responsibility for operations and maintenance of a particular activity, or even an entire railway. Competition arises from the possibility of several firms bidding for the contract. One drawback is that although it is often an explicit goal to turn over management to local staff at the end of the contract, it has proven difficult to incorporate incentives and mechanisms for local staff development.

**(e) Leasing to the Private Sector**

Leasing can be similar to contracting, but in this case the contractor pays a fee for the use of the fixed assets. The lease contractor assumes more risk than a management contractor because it must typically finance working capital and replacement of some assets while the owner may remain responsible for a share of investment and debt service. In return for assuming more risk, the lease contractor has more autonomy, in particular, control over working capital and all aspects of staffing and management.

The Japan Freight Railway Co. operates their services over the tracks of another entity in return for a fee. In 1985, the State Railways of Thailand (SRT) contracted

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<sup>23</sup> Galenson, Alice and Louis S. Thompson. 1993. "Forms of Private Sector Participation in Railways." Transport Division, Transportation, Water and Urban Development Department, The World Bank, Washington, D.C.

through a lease agreement to private operators the provision of long-distance express passenger services on three lines, which were previously unprofitable. The new operators emphasized service quality (e.g. air conditioning) as well as efficiency, and were able to attract former road users, mainly high income customers traveling long distances. After two years under lease contract, all three lines were able to cover operating costs and earn substantial profits. These lines have now been returned to SRT.

**(f) Leasing from the Private Sector**

In many countries, a private company, often specialized in leasing, buys a piece of equipment and leases it to the railway. Such opportunities are particularly favourable for specialized or limited use equipment. Indian Railways created a subsidiary, the Indian Railways Finance Corp., which issued bonds to private individuals and entities, to buy equipment, and lease it to the railway.

**(g) Concessions**

Concessions are a form of lease in which the contractor agrees to make certain fixed investments and retains the use of the assets for a longer contract period. In some countries concessions of up to 30 years have been granted to operators, who have responsibility for all maintenance and investment. Concessions often involve bidding for the lowest subsidy on operations and investment.

**(h) Joint Ventures**

Typically joint ventures involve private partner companies contributing to the development capital, planning, and management expertise in the development of land or other real estate owned by a railway. British Rail created a Property Board to develop station space in concert with the private sector. Another kind of joint venture is the use of a railway right-of-way by a utility for placing telecommunications cables. The simplest form of this, the "pipe and wire" lease, lets a utility take advantage of the rail right-of-way for access to a strip of land to lay its pipes or wires between major population centers, in return for a fee. In its more elaborate form, found in Europe and Japan, communications companies have used the right-of-way for fibre optic cables in a joint venture with the railway. The railway gets its return through a fee for the installation of the cable, better communications services from its use, and revenue or profit-sharing arrangements.

**(i) Private Ownership**

A few examples can be found of private ownership in railways (which may include some public participation, as long as it is not a controlling interest). The most extreme examples are to be found in the Sweden and United Kingdom where the right to provide services have been franchised to privately owned and operated train operators. Indeed in the United Kingdom for a time the network infrastructure was fully privatized. Examples can also be found of privately owned services on publicly owned railways, for example, food catering on Indian Railways. In Poland, various subsidiaries of the railways, such as manufacturing

and repairs, are being transformed into private, joint stock, or independent state-owned enterprises.

There is no single recipe for promoting PSP in railways<sup>24</sup>. There are, however, different circumstances which will tend to push a solution in one way or the other. Firstly, there has to be an effective private sector outside the railway; where this is not the case the role for joint ventures will be limited until a private sector does develop. In many countries, though, there is a large enough private sector to begin looking for potential partners or investors, and it will almost always be advantageous to begin to enlarge the role of the private sector. Secondly, there must be at least a reasonable expectation of competition among partners or suppliers in the private sector. Where the private sector consists of a number of effective monopolies, it is questionable what PSP will actually accomplish, other than bringing a better profit orientation to the railway. Thirdly, the real driving force will be the market and the competition within it. For example, the commuter rail role is often left to the public railway; in this case, the answer may well be decentralization to the local level rather than private sector development although, of course, the local operator may actually be able to go farther in its own PSP initiatives than a national railway would. On the other hand, where the service is highly competitive with the private sector, as is the case with rail freight or intercity passenger traffic, concessioning or outright sale to the private sector may be the only sustainable solution because public enterprises do not compete well with private enterprises. Finally, the choice between concessioning or sale is also subject to degrees. In the case of a railway that carries essentially one product (e.g., mineral ore) which is produced by the private sector, or even a railway which carries predominantly freight, outright sale may well be possible and desirable. Where the railway has a mix of passenger and freight traffic, or where the prevailing political ethos forbids sale, then concessioning is probably preferable. One of the advantages of concessioning in this respect is that there can be several of them, some in private hands, others in public hands (national as well as local). Table 2.4 outlines the possible scope for private sector sector finance and management in railways.

| <b>Table 2.4. The Scope for Private Sector Finance and Management in Railways</b> |  |  |
|---|--|--|
|   | <b>RAILWAY INFRASTRUCTURE</b>  | <b>TRAIN SERVICES</b>  |
| <b>Urban Rail</b>   | Almost all public; concessions can be considered for some larger cities.   | Concessioning possible with social objectives being embodied in performance contract arrangements. |
| <b>Inter-Urban Rail</b>   | Usually public. Publicly owned companies should be commercialized.         | Privatization or concessioning should be encouraged.   |
| <b>Freight Railways</b>   | Privatization or concessioning is possible for dedicated freight railways. | Privatization or concessioning should be encouraged.   |

<sup>24</sup> Moyer, Neil E. and Louis S. Thompson. 1992. "Options for Reshaping the Railway." Policy Research Working Paper No. 926 (June). The World Bank, Washington, D.C.

## Section V Alternative Organizational Structures

The various railway restructuring measures can be characterized by two dimensions: (a) the degree of separation between infrastructure and services; and (b) the extent of private sector participation in the sector. Table 2.5 provides a description of the alternative organizational structures currently employed in the railway industry worldwide.

As described earlier, there are three main different options for the vertical organization of the railway industry: (i) vertical integration; (ii) competitive access; and (iii) vertical separation. The first structure corresponds to the traditional model of railway organization, where a single (usually public) entity controls all the infrastructure facilities as well as the operating and administrative functions. Competitive access is characterized by the existence of an integrated operator (usually public), which is required to make its rail facilities (tracks, stations, etc.) available to other operators on a fair and equal basis through the trading of, for example, circulation rights. Alternatively, in the complete vertical separation scenario, the ownership of facilities may be fully separated from other railway

| <b>Table 2.5. Alternative Organizational Structures in Railways</b> |  |                                      |   |   |
|---|--|--------------------------------------|---|---|
|   |  | <b>Extent of Vertical Unbundling</b> |   |   |
|   |  | <b>Total Vertical Integration</b>    | <b>Competitive Access</b>               | <b>Vertical Separation</b>              |
| <b>Extent of Private Participation</b>                              | <b>Government Department</b>                   | India, China and CEE                 |   |   |
|   | <b>Public Enterprise</b>                       | European Railway                     |   |   |
|   | <b>Reformed Public Enterprise</b>              | EU and CEE                           |   | Sweden                                  |
|   | <b>Service Contract with Private Sector</b>    |                                      |   | United Kingdom (rolling stock)          |
|   | <b>Management Contract with Private Sector</b> |                                      | Japan (HSR)<br>Pakistan (tickets sales) |   |
|   | <b>Leasing to Private Sector</b>               |                                      | Japan (track)                           |   |
|   | <b>Leasing from Private Sector</b>             |                                      | Europe (rolling stock)                  |   |
|   | <b>Concessions (Franchising)</b>               |                                      |   | United Kingdom passenger train services |
|   | <b>Joint Venture</b>                           |                                      |   | United Kingdom                          |
|   | <b>Private Company</b>                         | New Zealand                          | Sweden, Japan                           | United Kingdom (freight)                |

functions (train operations, marketing, etc.) and may also be privatized. This form of restructuring is very attractive because railway infrastructure, which remains characterized by natural monopoly conditions, is separated from railway operations, where potential competition among different operators may be implemented. In terms of

private participation in the railway industry, it is possible to identify increasing degrees of privatization (ordered in terms of increasing private participation). At one extreme there is the **government department**, where the railway is fully controlled by the government or the relevant Transport Ministry, so its degree of independence is zero. Ownership and operations are fully public and financed by budgetary transfers. The second example is a **public enterprise**, where the railway is characterized by greater managerial autonomy, although still subject to government approval for many of decisions. Normally, these railways sign more or less formal **contracts** with the government, where the objectives and responsibilities of each entity are clearly specified. In addition, it is usual that some restrictions on the levels of public subsidies are gradually introduced. Similarly, the case of a **reformed public enterprise** corresponds to a situation where the railway is corporatized (into a shareholding company), commercialized (made financially and managerially autonomous), and made subject to the country's company law. However, the government, as the main owner, decides the pricing policies and the investment levels, while guaranteeing, by the necessary subsidies, the supply of non-economic social services. There are other situations that include some mixed forms of cooperation between private and public capital. For example, in some countries rail services are provided in a regime of **service contract** with the private sector, where, maintaining full ownership, governments or public enterprises can contract any activity to be performed by a private sector entity. Examples of these activities are food catering, medical services, systems of ticket sales, maintenance of physical assets, etc. Related to these there are **management contracts** with the private sector, where the contractor assumes the responsibility for the operations and maintenance of certain activities. A variation on these is given by **leasing** to the private sector. In this case, the contractor pays a fee for the use of the fixed assets. The contractor has more autonomy than in management contracts, controlling aspects such as the working capital and the staff. For this reason, the lease contractor assumes more risk than a management contractor. The owner maintains responsibility for investment and debt service. In many countries rolling and locomotives are sold or leased to non-railway entities, as in the transportation of specialized freight. **Concessions** are a broader form of lease in which the contractor also agrees to make certain fixed investments and maintains the use of the assets for a longer contract period. At present, it is the most common way of restructuring the rail industry. Finally, there are **joint ventures**, which entail the largest degree of private participation, where private partners contribute development capital, planning and management expertise to develop land or other real estate owned by a railway. There is also full **private ownership**, where certain services or whole companies are operated by private firms.

## Section VI

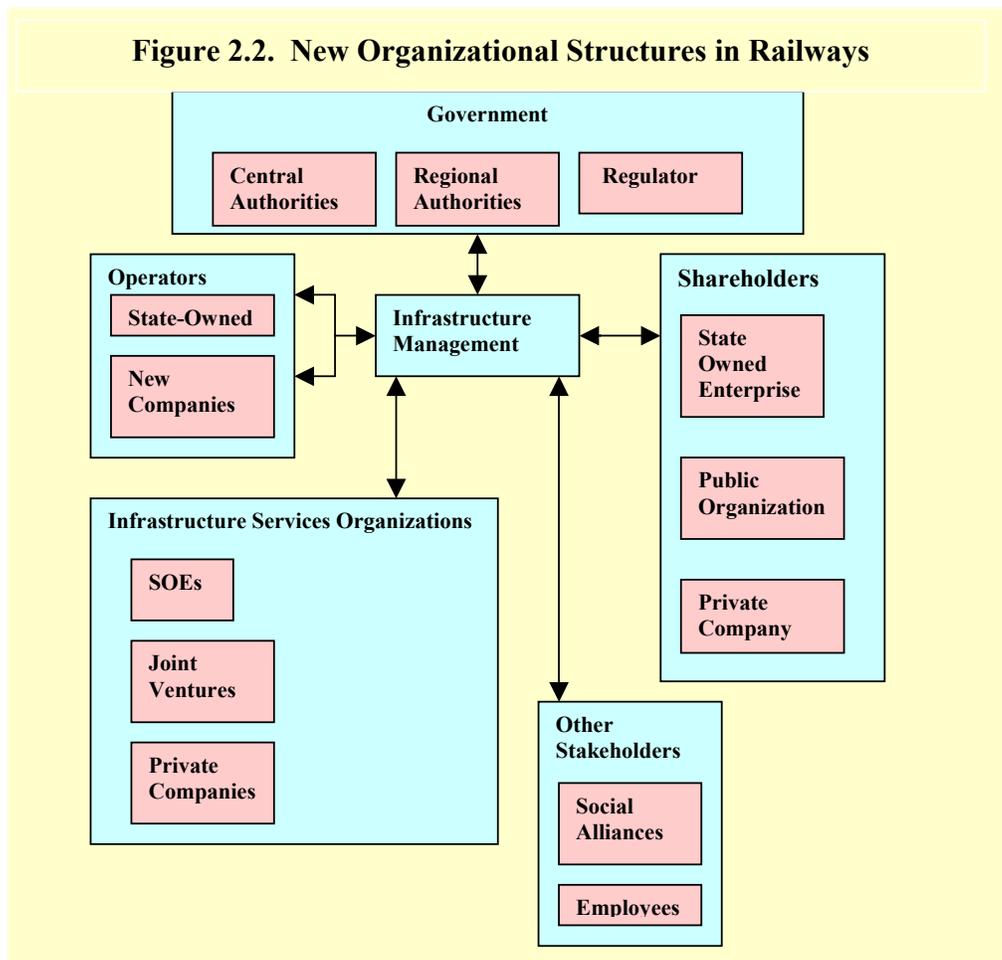
### Models for Railway Restructuring

The restructuring of railways has created many new organizations and entities involved with the provision of all aspects of railway infrastructure and service provision. Figure 2.2 sets out the nature of the new organizational structure of railways and the interactions between the various sub-systems<sup>25</sup>.

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<sup>25</sup> Vassilios A. Profillidis. *Separation of Railway Infrastructure and Operations*. Japan Railway and Transport Review 29, December 2001.

The figure shows that Central Government will normally have a role in determining the infrastructural needs of the system both in terms of investment and its maintenance, however regional authorities may have a significant role particularly for urban and commuter railways and the funding of services that meet public service requirements. Most countries also perceive a need for an organization to regulate railway issues and that these should be independent from but dependent on government. It is common now for railway restructuring to separate infrastructure management from train operations. The figure shows that operators may be state-owned or private or a mixture. A key issue for rail regulators is to determine the fairness of access charges and terms for new operators of railway services. The infrastructure itself may be owned by a public organization, the state-owned railway in a vertically integrated structure, or even a private company. This provides a means of isolating the historic debt of the state railways prior to reorganization. Unbundling or vertical separation has also led to the rise of private companies and public-private joint ventures with regard to infrastructure services organizations and maintenance companies. Increasingly those divisions of state-owned railways responsible for engineering functions and ancillary activities have been unbundled and sold to the private sector. Finally, organizations have, in some cases, had to be established to take responsibility for residual staffing issues arising from restructuring.



Overall, there is a paradigm change in terms of what railways are required for, and in terms of the kind of railways that are needed. The recognition that efficient markets are a better provider of railway services than public monopolies has freed policy-makers to examine all the variables involved in services, structure and competition in railways.

Most railways operate in a number of different commercial and ‘social’ service markets. Commercial freight and intercity passengers are different markets with different demands on track, equipment, rolling stock and other facilities. They are provided in competition with other private modes of transport and, by and large, are justified only if the revenues from customers and/or from government contracts exceed costs. Normally, government support would be for capital and not operations. The customers are usually individuals or shippers.

Urban passengers are a different, often growing market segment and often justify support from local or regional government. The customers are individuals and government agencies who often are prepared to provide capital and operating subsidies for the wider social benefits generated, thereby closing the gap between fares received from passengers and costs.

The creation of discrete market oriented business units with improved managerial focus has been a key driver in railway restructuring throughout the world. It is clear that a number of models, of railway structures, are evolving depending on the extent of vertical and horizontal separation that has been pursued and the degree of private sector involvement that has been that has been created. Table 2.6 encompasses the main alternative models that have emerged – the most common are shown in italics.

| <b>Table 2.6. Alternative Models for Railway Restructuring</b> |                           |   |  |  |
|--|---------------------------|---|--|--|
|  |                           | <b>Private Involvement</b>  |  |  |
|  |                           | <b>Public Ownership</b>   | <b>Concessions or Franchises</b>   | <b>Private Ownership</b>                       |
| <b>Structural Change</b>                                       | <b>Integral</b>           | <i>Vertical Integration with State Ownership</i>  | Vertical Integration with a State Railway but with Concessions                                     | <i>Vertical Integration with Privatization</i> |
|  | <b>Integral</b>           | <i>Vertical Integration with Commercialized State Firm</i>  |  |  |
|  | <b>Dominant Integral</b>  | Multiple State Owned Firms with a Dominant or Separated Integral Commercialized State Firm (usually a divisional structure – based on markets or regions) | <i>Competitive Access for Private Rail Operators with a Dominant Integral usually State-Owned</i>  |  |
|  | <b>Separated Integral</b> |   | <i>Competitive Access for Private Rail Operators with a Separated Integral usually State-Owned</i> |  |
|  | <b>Separation</b>         | <i>Vertical Separation with Commercialized State Firm</i>   | <i>Vertical Separation with Concessions</i>  | <i>Vertical Separation with Privatization</i>  |

Vertically integrated railways are still found in Russia, India and China where they operate as extensions of Government ministries and in the CEE where they are commercialized state owned enterprises. In the EU the railways are mostly commercialized state firms with vertical separation. New Zealand has retained vertical integration but with a privatized railway. Competitive access is common and CONCOR (India) and East/West/Central Japan Railways provide good examples. Swedish suburban railways fit the model of vertical separation but with concessions. Railways in the United Kingdom were until recently vertically separated with both the infrastructure and services in private ownership. Recently, the infrastructure has been transferred to a 'not-for-profit' company. Clearly, a mixture of approaches is possible and some railways are in the process of transition from one model to another.

There is no single ideal model for railway reform - every model will have costs, weaknesses and problems. Transferring wholesale, models adopted elsewhere is not a realistic course, as each model has been developed to meet the unique circumstances of each country. Reforms adopted at the level of the European Union are particularly unique as they have to satisfy the complicated political and economic compromises involved in managing a regional co-operation institution. Moreover the goal of the European Commission is, naturally, to create a single market in rail transport services which may not be relevant in other contexts. A range of restructuring options will need to be developed and evaluated with reference to the particular circumstances in any given country.

# 3

## **Guidelines and Recommendations for Governments Undertaking Railway Restructuring**

### **Introduction**

It seems that in recent years nations, at every stage of economic development, have shared the costly experience of troubled railway systems. Further, there does not appear to be a miracle cure and so many governments are beginning the arduous but essential process of achieving serious reform through railway restructuring. It also seems that only serious restructuring holds any prospect of arresting the process of continuing decline in the railway industry. In fact, it is often the case that only when it is seen how much worse things can get that ministers and management are moved to act on their railway problems. To delay reform can be fatal and successful reform requires careful long-term planning which addresses all the implications of change for rail users, workers, taxpayers and governments.

This chapter provides guidelines and recommendations for governments that are facing the challenge of fundamental restructuring and of transforming a troubled state-owned railway into an industry operated on commercial principles possibly with private sector participation. It provides a framework for a government's strategic decision-making about the future of its railway industry and sets out the broad actions necessary that are necessary for achieving practical reform, including:

- (a) strategic analysis;
- (b) strategic choice; and
- (c) strategic implementation.

### **Section I Strategic Decisions**

Railway crises do not come about suddenly, nor do they happen by accident. In Europe and in the ESCAP region, railway crises occur because railways have not been encouraged, or allowed, to respond to changes in the economies they serve. It is common for railways to continue to offer services which are no longer in demand, at prices which are often far below cost, and with a quality of service which is inferior to the customer's expectations. Typically also, as the railway becomes a fiscal drain on an economy already short of resources, longer range maintenance and capital needs are neglected, further diminishing the railway's capabilities over time. The longer the problem continues the more difficult and expensive it is to resolve, and the more likely it is to be deferred. In Europe and the ESCAP region it seems that railway crises have a number of common features and these are listed in table 3.1.

**Table 3.1. Common Features of Railways in Crisis**

**Railways usually:**

- are one of the nation's oldest institutions and are perceived as a 'public service' provider;
- have engineering and production-oriented management cultures which are uniquely resistant to change;
- have a large unionised work force with political power which is used to protect the size of the labour force;
- have been forced to set uneconomic passenger fares and freight rates as an instrument of government policy on poverty; regional development; industrial or agricultural development;
- are protected by the ministry that owns and operates as an instrument of political influence; and
- are suffering loss of market share.

Since the late 1970s many countries have been coping with the need to restore the financial and market performance of their railways. The need for competitive adjustments is a challenge that both state-owned and privately-owned railways have had to face. Indeed, well-managed privately owned railways are in a perpetual state of strategic realignment. Continuous reinvention is their response to competition. Publicly owned railways, on the other hand, require higher government authority and explicit public policy redirection before they can respond to the challenge of improving their competitiveness. Railway restructuring, therefore, is a part of *strategic management*, that is, the management of the process of strategic decision-making<sup>26</sup>.

Strategic Management is concerned with deciding on the strategy and planning how that strategy is to be put into effect. Railway restructuring involves strategic decision-making and table 3.2 lists the main characteristics of strategic decisions as found in railways.

Firstly, railway restructuring is concerned with the *scope of the industry's activities*. The issue of scope is fundamental to strategic decisions because it concerns the way in which those responsible for managing the railways conceive its boundaries. It concerns how one divides the industry into manageable units. It also concerns decisions about what activities or markets the railways, and its component parts, should serve. The following distinctions should be considered in examining the railway sector<sup>27</sup>.

<sup>26</sup> Johnson, Gerry and Scholes, Kevin. *Exploring Corporate Strategy*. Prentice Hall International. 2003.

<sup>27</sup> Huff, Lee W. and Thompson, Louis S. Policy, *Techniques for Railway Restructuring*. Research, and External Affairs Working Papers WPS 380. March 1990. Transport Infrastructure and Urban Development Department. The World Bank, Washington D.C.

**Table 3.2. The Characteristics of Strategic Railway Decisions**

**Railway Restructuring Decisions involve:**

- the scope of the railway industry's activities;
- matching the activities of the industry to its environment;
- matching the industry's activities to its resource capabilities;
- major resource implications;
- the allocation and re-allocation of the major resources of the industry;
- the values, expectations and goals of the main stakeholders;
- the direction the railway industry will move in the long term; and
- the implications for change throughout the industry and are therefore likely to be complex.

**(a) Geographical Distinctions**

Unlike other markets, transport markets have a fundamental geographic dimension. Railway markets and the track and terminals that provide access to them can be segmented geographically in order to focus management attention on shipper and passenger needs which are typically local. Here a key analytical step involves segmenting freight and passenger service patterns into distinct and self-standing service sub-networks. Where traffic patterns are primarily local, economies of large-scale operation over a national network may not apply. Smaller operations may, in fact, be better suited to serving the need of local shippers or passengers.

**(b) Line of Business Distinctions**

The logic that applies to geographic segmentation also applies to market-focused, line of business segmentation. Railways typically serve not one but dozens of distinct product markets, each with its own operating and geographic characteristics and each defined by different service needs and unique competitive challenges. Passenger and freight markets are the most obvious line of business in which traditional railways participate. Unbundling rail assets along distinct lines of business makes sense when the objective of the restructuring exercise is to enhance the ability of the surviving enterprises to respond with tailored services to particular customer needs and when, moreover, the assets required to support distinct lines of business can be separately managed.

**(c) Functional Distinctions**

Another way of separating railway assets is along functional lines. Railways require at least four distinct value adding functions: train operations, track maintenance, equipment maintenance, and commercial (sales and marketing) functions. It follows that these distinct functions may be separated as part of the scoping exercise and any subsequent restructuring. The conventional wisdom in

the rail industry has been that vertical integration is essential to efficient operations. However, the United Kingdom experiment with unbundling substitutes a fundamentally different paradigm – one based on competition in every function except that of network access and control, where a central track authority rents capacity to train operators.

**(d) High Density versus Low Density Traffic**

Another useful segmentation of rail assets involves a separation of lines that are profitable and that typically have high traffic density from lines that are less profitable (or not profitable at all) and that typically have low traffic density. This distinction can be used to facilitate the abandonment of light density lines through a process regulated by government.

**(e) Common Network Use versus Exclusive Network Use**

Another useful segmentation of assets is by category of track use. For example, private train operators can run over the tracks of multiple owners, as well as over their own terminal tracks or those of local service networks.

Secondly, railway restructuring is concerned with *matching the activities of the industry to the environment in which it operates*. Modern technology used effectively by the road haulage, inland waterways, and air transport competitors, and the rising service expectations of both shippers and passengers, have typically precipitated the crises that have led to change. Fundamental change is needed to restore the low cost and high quality service advantages that rail can provide vis-à-vis road, inland waterway, and air modes of transport.

Thirdly, restructuring *involves matching the railway industry's activities to its resource capabilities and will usually have significant resource consequences*. Restructuring involves aligning the railway's resources, and their use, with market needs in ways that will enhance the value of the surviving enterprise. Matching the service delivery capabilities of the rail enterprise with market requirements is the essence of the restructuring process. Changes in resources deployed by the enterprise that do not increase the value of the services provided to the enterprise's customers actually decrease the enterprise's economic value and should be avoided.

Fourthly, restructuring strategy will not only be affected by environmental forces and resource availability, but also by the *values and expectations of those who influence strategy*. As the term implies, "restructuring" entails a clean break with past public choice practices, corporate governance protocols, management methods, and institutional arrangements. It implies, as well, a fundamental recalibration of service expectations and service delivery standards. Moreover, since railway restructuring affects the interests of multiple parties, it involves numerous political and economic trade-offs in the course of rebalancing these interests.

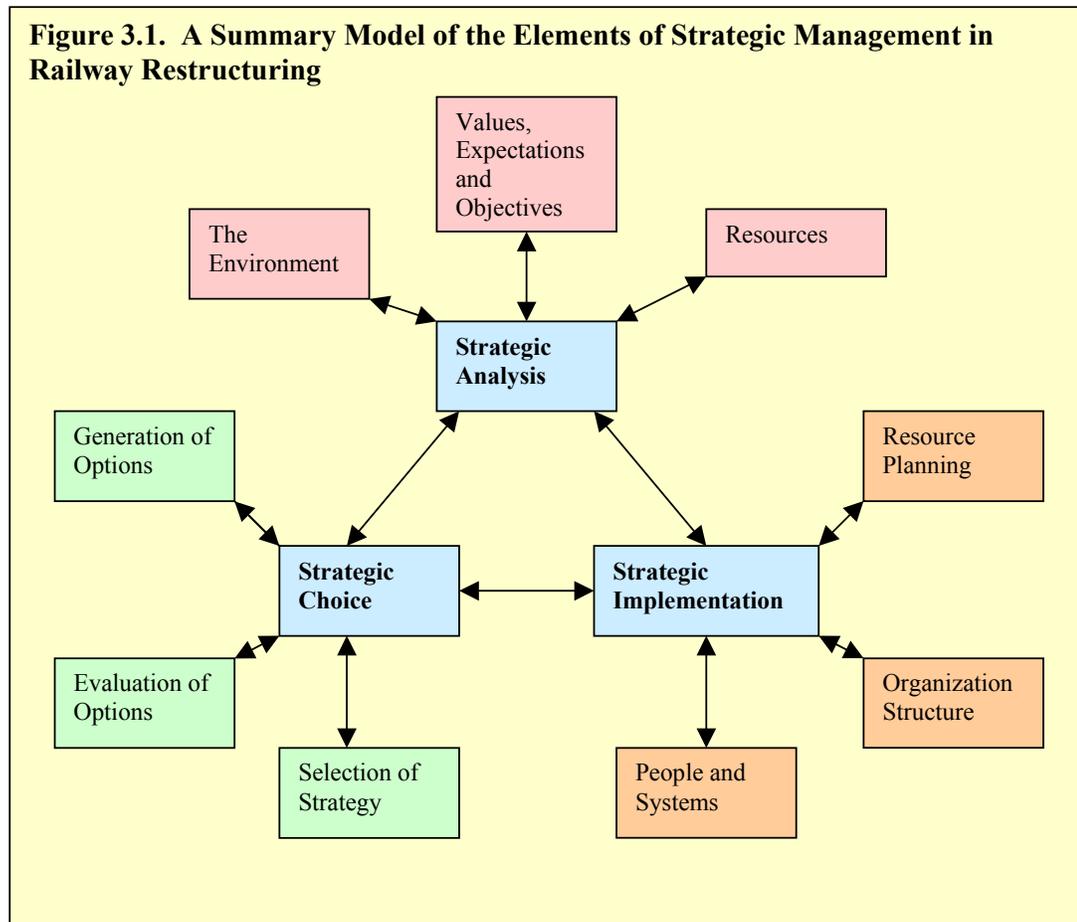
Fifthly, restructuring concerns the *direction the railway industry will move in the long term, and the implications for change throughout the industry and are therefore likely to be complex*. Indeed, strategy management neither provides a precise road map to guaranteed outcomes, nor a check list needing only the proper boxes to be marked off,

nor a rule book with a set of correct answers. Indeed restructuring railways and their governments will immediately realize that in an increasingly competitive world such precision and certainty do not exist. If they are to succeed, the government and railway planners who lead the reform effort must display the same qualities of flexibility, transparency in the assembly and in the presentation of information. Careful assessment of the risks of alternative courses of action, and clarity of the conclusions reached and actions to be taken is essential if the reformed railway is to succeed in a competitive commercial transport environment. Both the reforming decision-makers and the reformed railway must be infused by the same spirit, exchanging the static "rules and regulations" of state bureaucracy for the open-minded and dynamic imperatives of a competitive enterprise. In essence, reform must become a state of mind.

*Strategic management* has three main elements as set out in table 3.3 below.

| <b>Table 3.3. The Main Elements of Strategic Management</b> |  |
|---|--|
| ➤ <b>Strategic Analysis</b>                                 | Strategic Analysis involves seeking to understand the strategic position of the railway industry.                          |
| ➤ <b>Strategic Choice</b>                                   | Strategic Choice involves the formulation of possible restructuring options, their evaluation and the choice between them. |
| ➤ <b>Strategic Implementation</b>                           | Strategic implementation is concerned with planning how the choice of restructuring strategy can be put into effect.       |

In practice, there is considerable overlap between these elements in the practical application of strategic management and strategic decision-making. Figure 3.1 below shows the components of each element and how they are inter-related.



Policymakers have to be able to cope with overall considerations facing the railway industry, its organizational structure and its environment. It is necessary to take an holistic view of the railway industry and conceive of its major problems and issues that are of strategic significance with regard to each element.

## Section II Strategic Analysis

Strategic Analysis is concerned with understanding the strategic situation of the railway industry. What changes are going on in the environment and how will they affect the railway industry and its activities? What is the resource strength of the railways in the context of these changes? What do the stakeholders – government, local authorities, tax payers, freight users, passengers, environmentalists, other transport users, private shareholders, and trade unions – aspire to and how do these affect the present position of the railways and what could happen in the future? These questions are now examined in more detail.

**(a) Environment**

Railways exist in the context of a complex and changing commercial, economic, political, social and technological world. Since strategy is concerned with the position and role of the railways in relation to their environment, an understanding of the environment's effects on the railway industry is of central importance to strategic analysis. The historical and environmental effects on the railways must be considered, as well as the present effects and the expected changes in environmental variables.

An analysis of the strengths, weaknesses, opportunities and threats confronting the railway and its major competitors in each market segment is an important part of formulating a restructuring plan. The purpose of this analysis, generally termed a *SWOT Analysis*, are shown in table 3.4.

**Table 3.4. Environmental Factors in a SWOT Analysis of the Railways**

**Factors normally considered in the SWOT Analysis include:**

- the current and projected market shares of the railway and its major competitors;
- the relative financial strengths of the railway and its major competitors;
- the price and service sensitivity of demand and the relative abilities of the railway and its competitors to respond to customer price and service requirements;
- the technological strengths and weaknesses of the railway and its major competitors; and
- the opportunities presented for product/service diversification.

A SWOT analysis may identify the strengths and weaknesses of the railways which give rise to opportunities and threats. An example of an external opportunity might be the imposition by the government of increased road user charges on commercial road transport operators, since this might have the effect of improving the competitiveness of rail in relation to road transport. Conversely, an increase in allowable axle loads for trucks might be an externally imposed threat for rail, since it would reduce its competitiveness with road transport. Internal SWOT analyses on the other hand are intended to identify the SWOT factors of the organization, in relation to those of its major competitors. They are intended to identify any positive or negative characteristics of the organization which must either be exploited or corrected to enable the organization to achieve its stated corporate objectives. An example of an internal weakness might be the railway's inability to price flexibly in order to obtain additional traffic (when this would be a major strength for the competition). Conversely, an example of an internal strength might be the railway's ability to guarantee the security of freight consignments against damage or pilferage, when its competitors might not be able to provide such guarantees.

A review of the past performance of the railways over the past five years in relation to each identified market segment should also be undertaken. Such reviews should include consideration of trends with regard to the total market volume, or the total transportation volume, in each market segment. For example, for Commuter Traffic, this might be the total number of commuter passenger journeys per year and the total commuter passenger kilometres per year, by all modes, within the defined commuter catchment area. In addition, the railway system volume and percentage share of the total market volume, in each segment should be assessed. In the case of the Commuter Traffic example, this would be the number of commuter rail passenger journeys per year, the total commuter rail passenger kilometres per year and the rail percentage share of the total commuter journeys and commuter passenger kilometres (for all modes), within the defined commuter catchment area. Finally, an analysis should be made of the revenue earned, the financial contribution (revenue less long run marginal costs) derived from that revenue, and the contribution rate (e.g. contribution per passenger, passenger km, freight ton or ton-km), for each segment. In the case of commuter traffic, this would be the total fare revenue per year generated by rail commuter traffic within the defined commuter catchment area and the financial contribution attributable to that traffic (i.e. fare revenue less attributable long run marginal costs). What is important in such a performance review is the *trend* in the various indicators. For example, has the rail market share in a particular segment increased, remained static, or reduced over the period reviewed? What has been the trend in financial contribution for a particular segment, relative to the trend in rail market share? A rising trend in market share can often correspond with a falling trend in financial contribution rate, if the railway is forced by competition to trade off margin for volume by dropping its charges. The performance review must provide a suitable foundation for the formulation of the restructuring strategies.

The assessment of the environment should also evaluate economic forecasts and policies. Key government macroeconomic policies and forecasts, e.g. for GDP and interest rates, or more specifically, for new trade and agricultural policies which move the country from being a net importer of a product to being a self-provider, or vice versa can provide important insights. Estimates of growth in significant rail commodities may provide grounds for optimism about growth in traffic. The Government should also identify any plans it may have for large scale population relocation or remote area development, and the extent to which it expects the railway system to be involved.

Analysts must also carefully examine any policies toward the competing modes of transport. The Government's policies for road transport, inland waterway, and air transport modes must be considered. In many countries, road users are believed not to pay a fair share of the costs of the road systems they use or of the environmental costs they generate, and to benefit from lax (or nonexistent) standards relating to vehicle registration, axle-loading, safety, and financial fitness. These advantages tend to benefit road transportation and disadvantage the railway. Furthermore, government budgets must bear the costs of any such privileges permitted by uncoordinated and inconsistent modal promotional, subsidy, loan, grant, and tax policies. It is also vitally important that the planners assess the degree to which the demand for transport is distorted. If, for example,

most of the freight shippers or receivers are government agencies, and if these agencies experience no effective pressure to minimize their cost of transport, then the market will not respond as expected to a commercially oriented railway. In many countries, correcting distortions on the demand side can play an important role in the process of restructuring the railway's interaction with its markets.

Environmental assessment is a major task because the range of environmental variables is great. Many of these variables will give rise to opportunities for the railways and others will exert threats. The main challenge is to distil out of this complexity an analytically based view of the main environmental impacts for the purpose of strategic choice.

### **(b) Resources**

Just as there are outside influences on the railways and the choice of restructuring strategies, so there are internal influences. The *strengths* of the railways can be assessed by determining what the railways are good at doing or what resources it has that are superior to the competing modes or provide it with a comparative advantage. The *weaknesses* of the railways can be assessed by determining what it is good at, or where its resources place it at a comparative disadvantage relative to other modes. These strengths and weaknesses are usually identified by considering the resource profile of the railways including its physical plant, its management, its financial structure, and its services. Again, the aim is to form a view on the internal influences – and constraints – on strategic choice.

Typically the weaknesses in a railway's profile include excessive levels of debt, redundant personnel, too much physical plant, and operating and other costs that exceed revenues. However, other factors should be identified during the strategic planning effort, which make the status of the railway absolutely clear. For instance, the age, number, and availability of locomotives and other equipment; the extent of deferred maintenance of permanent way and the general operating condition of rail plant; the availability of suitable computer systems; and the experience and qualifications of personnel at all levels of the organization. Such assessments are particularly relevant if the restructuring involves a requirement that the railways operate as a commercial enterprise. With this information collated, decisions must be made about the need for special steps to remedy the critical deficiencies. Some may require significant capital investment. Other changes, no less significant, are likely to be primarily institutional in nature. A major issue will be the availability of people, from top management on down, who can function effectively in a restructured railway with a competitive commercial environment. While the details of any necessary internal reorganization are best left to the implementation stage, analysis and discussion at the resource analysis stage is useful to ascertain whether Government assistance is required and to reassure Government that the restructured railway can function and succeed as a business entity.

### **(c) Values and Objectives**

The *value systems* of the stakeholders involved with the railways will affect strategy because the environmental and resource influences will be interpreted in

the light of these values. It is essential to establish the *Mission and Objectives* of the railways and of the enterprises that will comprise the reformed railways.

The *Corporate Mission Statement* should provide a clear indication of the purpose and direction of the railways and their component entities. It answers basic questions such as: “Why does this organization exist?” and “What business should it be in?” It is necessarily expressed in broad terms, but should not be sobroadly phrased as to lack focus<sup>28</sup>. Kotler<sup>29</sup> suggests that the mission statement should define the *competitive scopes*, as identified in Section I of this chapter, within which the organization will operate. In the context of the railways these might include: *the industry scope* or range of industries in which the railway will consider operating; the *products and applications scope*, or the range of products (services) and applications in which the railway will participate; the *competencies scope*, or the range of technological and other core competencies that the railway will master and apply; the *market segment scope*, or the type of markets or customers the organization will serve; the *vertical scope*, or the extent of vertical integration to be allowed in the railway’s activities; and finally, the *geographical scope*, or the range of regions (or countries) in which the organization will operate. Kotler also suggests that the corporate mission statement should stress the *policies* which the organization wishes to apply in dealing with customers, suppliers, distributors, competitors and other important groups. Above all, Kotler considers that the mission statement should provide a *vision* and a direction for the railways for the next 10-20 years.

The Mission will need to address the aims of the various stakeholders who have interests in the railway industry and its operation. Table 3.5 identifies the types of objective that different stakeholders may prioritize in railway restructuring.

| <i>Possible Objectives or Priorities</i>  | <i>Stakeholders</i>  |
|---|--|
| [1]<br><b>Maximization of the Proceeds of Railway Restructuring; Reduced Budget Outlays and Lower Subsidies</b> | Central Government; Local Authorities; and Taxpayers                                       |
| [2]<br><b>Operational and Cost Efficiency</b>   | Central Government; Local Authorities; Freight Users; Passengers; and Private Shareholders |
| [3]<br><b>Better Resource Allocation and External Efficiency</b>  | Central Government; Local Authorities; Taxpayers; and, other Transport Users               |

<sup>28</sup> *Guidelines for Development of Railway Marketing Systems and Procedures*. UNESCAP. Bangkok. 1998.

<sup>29</sup> P Kotler, *Marketing Management, Analysis, Planning, Implementation and Control*, 8th ed. (Prentice Hall, 1994), pp. 67-68.

|   |  |
|---|--|
| [4]<br><b>Innovation, Market Development and Dynamic Efficiency</b>                         | Central Government; Local Authorities; Freight Users; Passengers; and Private Shareholders     |
| [5]<br><b>Enhanced Social Equity</b>  | Central Government; Local Authorities; Taxpayers; Passengers; and Poorer Socio-Economic Groups |
| [6]<br><b>Effective Environmental Protection; External Efficiency and Optimal Modal-Mix</b> | Central Government; Local Authorities; and Environmentalists                                   |
| [7]<br><b>Risk Minimization</b>   | Central Government; Local Authorities; Freight Users; Passengers; and, Private Shareholders    |

The objectives of the various stakeholders concerned with railway restructuring are often conflicting. The maximization of the proceeds obtained from the restructuring process and the subsequent minimization of the financial burden on the state, will be primary goals of the government but this is likely to conflict with the aims of new railway enterprises with regard to the minimization of their costs and the preservation of funds to invest in the long term development of the railway. Freight users and passengers will probably prioritize the pursuit, by the railways, of operational efficiency in terms of providing quality services at the lowest possible cost with the most efficient use of resources. On the other hand, governments and taxpayers may prefer the goal of attaining allocative efficiency by setting rail fares on the basis of optimal prices equal to the marginal social cost, which, from an inter-modal viewpoint, facilitates the best distribution of traffics. Users and governments are likely also to promote the objectives of dynamic efficiency and market development which will require the minimization of costs in the long term by means of active and technology-improving investment policies. There can also be equity objectives, such as facilitating transport for citizens independent of their level of income. Commercially oriented railway enterprises are unlikely to provide such services unless specific funding is provided. Finally, the government may also consider the goal of optimising the allocation of capacity, which favours the management of railway capacity as well as the co-ordination with other modes of transport and the overall minimization of risks in terms of maintenance of the service across time and the risks of service unavailability.

Significant political skills will be required to produce a clearly stated set of objectives which are understood and agreed by all parties.

In order to reach a consensus and develop a mission, it is important to pose the **Crucial Policy Issues**. Given agreement that commercially-oriented operation of the railway is the objective, and with the desired railway services tentatively identified, the Strategic Plan must next identify those aspects of the national transport policy which apply to the railway, and lay out the crucial policy issues which have to be resolved if the objective is to be met. This process will have an impact on both the objective and the services, probably re-shaping both to some extent, but lead to a much clearer and more realistic understanding of the duties

and obligations which each party - Government and railway enterprise - ultimately must assume.

Each country will face some policy issues that are unique to it, but virtually all will confront those listed in table 3.6. The first issue is that of cost recovery. To operate on a commercial basis, the railway must charge its customers rates that cover the operating and capital costs of the services they demand. If not cost recovery must be achieved through some combination of revenues, subsidies, borrowings, or capital erosion. The important principle is that the revenues and/or government support for each service should be equated with costs. This is the only way that rational choices, and plans, can be made. Secondly, policy-makers should develop agreement on the pricing principles to be used in each market segment. It is crucial that the reformed railway be given substantial freedom to negotiate contract rates with its freight customers, and to raise and lower rates in response to competition, in market and service segments that the Government will not directly subsidize. Such freedom will require some regulation to prevent monopolistic or predatory pricing in situations where insufficient competition exists. Thirdly, where the government chooses to support an otherwise uneconomic railway service, it should be responsible for determining which agencies will be responsible for funding and pricing the service. Finally, over-staffing is a crucial issue to be considered at the outset of any restructuring exercise.

**Table 3.6. Crucial Policy Issues**

➤ **Cost Recovery from Users**

Revenues and/or government support for each service should be equated with costs. The strategic planning effort must include a careful assessment of the degree of cost recovery which is anticipated in total, and for each of the market/service segments identified previously. If there is little, or no, demand for a service and adequate rates cannot be charged, the service should be dropped by the railway. On the other hand, if governments (national, provincial, or local) are prepared to cover the shortfall between revenues and the operating and capital costs for a service, the railway should willingly provide the service.

➤ **Pricing Policies**

Many approaches to railway pricing exist and they are likely to differ by major line of business. Agreement is needed on the pricing principles to be used in each market segment e.g., fully commercial, "value of service" (often called "Ramsey") pricing for freight and selected intercity passenger services, "marginal cost" pricing for commuters and other intercity passenger services, and competitively-based profit maximization for commercial services such as leasing space in stations to private businesses.

➤ **Social Service Commitments**

Railways all over the world have been used, explicitly or implicitly, as instruments of social policy. Consequently, when restructuring, the government must specifically identify those uneconomic services that are to be continued, define the levels of required support, and identify the public authorities responsible for providing the funds.

➤ **Over-staffing**

In many countries, experience has shown that fair and equitable treatment of adverse effects on labour is absolutely crucial to successful the completion of a railway restructuring effort.

Railways all over the world have been used, explicitly or implicitly, as instruments of social policy. Integrating the country, opening up remote areas to settlement, encouraging economic development or foreign investment, income redistribution and political pacification through low (or no) fares for rail passengers, and various labour-related objectives, are a few among many reasons cited historically by governments for requiring their railways to provide below cost service. However, a commercially oriented enterprise cannot survive such policies, because of both incessant financial drain and the irrational management objectives which they entail. Consequently, the government must specifically identify those uneconomic services that are to be continued, define the levels of required support, and identify the public authorities responsible for providing the funds. Removing such services from the budget of the national government would place responsibility for supporting the service squarely on the users and local authorities that benefit from it most, and thus are best able to decide what the service is worth. In transforming the railway into a commercial enterprise, the work force will be affected significantly. In many countries, experience has shown that fair and equitable treatment of adverse effects on labour is absolutely crucial to successful the completion of a railway restructuring effort. Government must deal with this issue directly, cushioning the impacts in light of the political and economic conditions which prevail. Excess rail labour must be dismissed, transferred, or retrained for work elsewhere in the economy, and the underlying causes of the redundancy (restrictive practices and government employment policies, among others) corrected. Such staff restructuring is best managed as a government responsibility. Attrition, early retirement, and job severance payments may all have a role to play. Government must decide and then provide the necessary programs and funding. Government may also need to assume the burden of any unfunded pension liabilities for railway workers. If the issue of labour redundancy is not resolved promptly, however, rail costs will remain too high, efficient management will be thwarted, and the railway's commercial objective will not be achieved.

In the broadest sense, the mission of the restructured and revitalized railway will be to provide an adequate and efficient rail service for freight and passengers by replicating the behaviour of a commercial, profit-oriented railway enterprise operating under conditions of adequate competition. This means that the railway's approach to providing services must be demand-driven, customer-oriented, market-determined, and results-lead – as summarized in table 3.7. If the market (or government) will not pay for a given service, it will not be offered by the railway. This does not mean that the railway or any of its assets must necessarily be privatized, however incentives and authority should be created so that it is in the railway's interest, and within its power, to carry out the mission defined for it.

**Table 3.7. The Mission of a Restructured Railway**

**A Revitalized Railway should Aim to:**

- to provide an adequate and efficient rail service for freight and passengers by replicating the behaviour of a commercial, profit-oriented railway enterprise operating under conditions of adequate competition.
- to provide services that are demand-driven, customer-oriented, market-determined, and results-lead.

While the Mission Statement should define the broad purpose and direction of the railways in the longer term, the *Corporate Objectives* should have a more specific focus. They should indicate the specific targets, both physical and financial, to be achieved by the organization(s) within the of the plan period. For example, one possible objective could be to require for the new railway enterprise(s) to at least break-even, that is, recover from revenues sufficient funds to pay the costs of providing the railway service, meet interest and principal payments on its debt, and contribute to new investment, in the railway. In such circumstances, the meaning of "break-even" must be carefully defined and explained. Other governments may wish the railway to earn clear profits as well, In effect generating dividends for its public or private owners. Ideally, the railway will become financially self-sustaining. In many instances, political and economic realities will dictate that full achievement of the profit objective be phased in over a period of time, as the railway evolves from its current situation to one in which it routinely operates as a commercial enterprise.

It is important to define the objective and set a challenging but realistic timetable for reaching it. The restructuring of a nation's railway system may take five to ten years to complete and even then will be subject to periodic review.

### **Section III**

#### **Strategic Choice**

Strategic Analysis provides a basis for *strategic choice*. This aspect of railway restructuring can be conceived of as having three elements:

#### **(a) Generation of Railway Restructuring Options**

An important step in strategic choice is to generate railway restructuring options (including no change). There are usually many possible courses of action open to government when restructuring railways. The options will vary according to the degree of vertical separation and private sector participation that is involved.

### (b) Evaluation of Railway Restructuring Options

The strategic options should be examined in the context of the strategic analysis to assess their relative merits. The government may seek strategies that build upon the strengths of the railways, overcome its weaknesses and take advantage of the opportunities, whilst minimising the threats facing the railways. The challenge is to search for '*strategic fit*' or suitability of a restructuring strategy. As well as comparing the suitability of alternative strategies it is necessary to consider the feasibility of implementation of restructuring options. Governments must also ascertain that possible restructuring options are acceptable to the relevant stakeholders. Would they meet the expectations and ambitions of those with interests in the railways? A restructuring strategy could quite easily meet the criteria of suitability and feasibility but not be acceptable. Often, for example, outright rail closures or reductions in service levels are perfectly suitable and feasible but are not effected because of resistance from users or unions.

### (c) Selection of Railway Restructuring Strategy

This is the task of selecting the restructuring option that will meet the agreed mission and objectives for the reformed railways.

The main elements that are necessary in any restructuring strategy for the railways, are set out in table 3.8:

| <b>Table 3.8. Elements of a Railway Liberalization Programme</b>  |
|---|
| <p><b>The main elements of choice in selecting a restructuring strategy:</b></p> <ul style="list-style-type: none"> <li>➤ the depoliticization and commercialization of operational management;</li> <li>➤ the selection and detailed design of an appropriate competitive market form;</li> <li>➤ the development of effective competitors; and</li> <li>➤ the development of regulatory institutions appropriate to the market form.</li> </ul> |

*Depoliticization and commercialization* is desirable in order to create a stable and credible basis for the commercial operational management of railway infrastructure facilities and services, thereby improving managerial efficiency. The requirements of depoliticization will depend on the form of competition that is to be created. The main prerequisite however, is the commercialization of the operational management of service providers, by undertaking the following steps:

#### **Step 1: Corporatization**

The first step towards depoliticization and hence commercialization of the railways, is the corporatization of the state-run railway. This involves creating independent legal entities that are subject to commercial law, commercial

accounting and commercial reporting practices. Such corporate entities should be responsible for all the normal commercial liabilities and bankruptcy constraints, and should not be underwritten by government. In addition, labour should be employed under normal commercial rules and should not be burdened with any special privileges or constraints. Corporatization normally requires the government to make clear and unambiguous statements about the legal status and obligations of former state enterprises upon their incorporation.

Greater market discipline in infrastructure provision is best achieved by full corporatization which gives the railways a commercial remit and the freedom to set tariffs and determine expenditures. This will work well where there is a method of pricing for use and there are no externalities. These conditions appear to hold for inter-urban freight railways although not for urban passenger railways where externality effects may be large.

## **Step 2: Separation of System Management and Operations**

The separation of system management from service provision requires the creation both of independent, commercial operations management and independent quality monitoring and control.

**Independent commercial operations management** requires that enterprises entering into a competitive process, whether “in the market” or “for the market”, are both totally responsible for their own commercial and financial outcome and totally free to make the necessary commercial decisions required for survival in a commercial market. The first aspect of this implies that the enterprises should be fully commercialized, and should not have any possibility of support other than that secured by their performance in the market. The second aspect implies that they should be free to determine what they shall produce and to enter into contractual arrangements with public agencies or with other firms. It also implies that they should not be subject to any special constraints by virtue of their ownership. For example, the conditions and terms of employment of staff should be determined by negotiation, as for any other commercial enterprise, and subject only to the legal constraints, which commonly and equally affect all enterprises within the market.

**Independent quality monitoring and control** means that, where there are sector specific requirements of a qualitative kind, this shall be the function of an independent agency. It is essential that such requirements are not vested in one of the competitors within the market. The obligations of the independent quality regulator should be to act in a way that does not discriminate between competitors in the market on the basis of ownership or status. In order that the functions of quality management and economic management are not confused it is desirable that the quality and safety regulations should be undertaken by a separate agency from that responsible for the procurement of services.

### **Step 3: Public Procurement through Independent Agencies with Performance Agreements and Management Contracts**

The system for managing the public procurement of railway infrastructure facilities and services needs to be depoliticized. This may be achieved by establishing a quasi-independent agency to act for the national or local government in performing its functions. Where there are few economies of scale it is possible to increase the effectiveness of competition by designing franchising arrangements for relatively short periods and for relatively small packages of service. However, the design and management of such a system is itself a substantial administrative task and therefore it may be sensible to have a professional management agency to act on behalf of the political authority as the procurer of services. The specialist agency will require a clear and explicit division of powers and responsibilities between itself and the other institutions involved. Where an agent acts as an intermediary between the political authority and the railway operators there will be two different contracts to design, namely:

- (i) the performance agreement between the political authority and its agent; and
- (ii) the contract between the agent and the operators.

The agreement between the political authority and its agent will normally be a performance agreement if both entities are in the public sector. It is possible, although rare, that the agency is itself put out to tender as a management contract. In either event the agency agreement will need to specify the objectives of the agent, the means of operation, and the sources of finance or financial limits within which it will operate. Within these terms of reference the agent will then have a clear responsibility to obtain the best service that is possible. It is often the case that the starting point is the existence of a government enterprise or department that combines the planning role with operational responsibilities. This however is no reason for continuing with such arrangements.

The main requirements for a performance agreement are as follows:

- (i) output measures;
- (ii) required performance standards;
- (iii) payment conditions;
- (iv) penalties; and
- (v) complaints procedures.

An extension of the performance agreement is the management contract; whereby a private management company is awarded a contract to manage the publicly owned assets in order to achieve certain government determined objectives. All revenues and costs, other than those of management remain public.

The advantages of this method are that it harnesses external management expertise and formalizes the requirements of management. The contract will also typically

involve incentive payments for good performance. The disadvantage of the private management contract is that the enterprise is still essentially a monopoly supplier, with all of the traditional public sector employment practices, over which the managers have relatively little influence. There is also a substantial danger of regulatory capture and corruption.

The contract requirements for management contracts are very similar to those for a performance agreement, except that the payment is usually in the form of a fixed fee to the managers together with a performance based bonus, the details of which must be included in the contract terms.

#### **Step 4: The Creation of an Independent Regulator**

The fourth step involves the creation of an independent regulator. The type of regulatory functions that remain to be performed and the appropriate form of regulatory structure will depend on the form of the competitive markets created by a program of liberalization.

*The selection and detailed design of an appropriate competitive market form and the development of effective competitors* is a matter of strategic choice in railway restructuring. The basic requisites for any railway restructuring scheme are:

##### **(a) Unbundling of Functions**

In monolithic sectors such as the state railways, the first steps towards lowering costs may have to be limited to the ‘unbundling’ of functions. Unbundling of railway and non-railway activities; of different lines of business, functions or regions will allow for competition in the supply of inputs. Those components for which scale economies are lowest can then be subcontracted on a competitive basis. This already occurs to a large extent in a number of areas:

- (i) in maintenance - particularly in the contracting out of track maintenance to the private sector;
- (ii) in system planning – by separating system development and planning from rail operations; and
- (iii) in ancillary service provision (marketing, ticketing, and catering).

##### **(b) Separation of Rail Infrastructure and Train Operations**

In many situations ‘unbundling’ should be extended to the vertical separation of railway infrastructure and operations. This can be achieved by separating the accounting arrangements; by creating separate management entities within the same enterprise; or, by creating entirely separate firms for network provision and for train services.

**(c) Separating out Public Service Obligations**

The setting of political objectives should be separated from the management of railway enterprises. This can be achieved by combining commercial objectives with management autonomy within performance agreements. These should explicitly state the Public Service Obligations (PSOs) and performance criteria that the railway enterprise must meet and the price that will be paid to the enterprise by government for the performance of those obligations.

After this much depends on the extent to which private sector participation and competition, 'for the market', is desired. Affermage contracts, concessions and franchises are an attempt to combine the discipline of private sector operation in a situation where government retains either a strategic role or a degree of public ownership. Under such arrangements typically the government grants specific exploitation rights to a private company for a defined period of time, usually between 5 and 30 years. The contracts, concessions or franchises normally have clearly defined objectives; are geographically delimited; and, implicitly or explicitly allocate risk between the parties involved. Such arrangements can be positive, where a firm pays the government for operating rights, or negative, where the government pays the firm for operating services on its behalf. Clearly the nature of the contract has a major influence on the role and function of any regulatory body. The main forms of agreement are as follows:

**(a) Affermage Contracts or System Concessions**

Affermage contracts or system concessions are an extension of the management contract. They involve the award of a concession (by competitive tender or by negotiation) to a private enterprise to run a system for a period of years. They differ from the management contract insofar as the concessionaire receives all the revenue and costs of the operation, and usually has a greater degree of freedom to determine the commercial strategy.

System concessions are usually for long terms (up to 30 years). They are consistent with the continued public ownership of assets and with public quality and price regulation. They do give the concessionaire a high incentive to generate and secure revenue. However, with long term concessions, concerns may arise about the degree of monopoly power that is assigned; the continued public role in asset provision; and the adequacy of the incentive for concessionaires to minimize costs.

The main provisions in the contracts for system concessions should include:

- (i) the definition of output requirements;
- (ii) the specification of prices;
- (iii) the provisions for inflation adjustment of prices;
- (iv) the performance monitoring arrangements; and
- (v) the arrangements for contract renegotiation.

In summary, under such arrangements operators lease both the physical infrastructure and the operating equipment, and are required to take some of the commercial risks and make most of the marketing decisions.

### (b) Franchises

In general, franchising involve operators providing the railway infrastructure and services, in defined regions or routes, that are fully specified by the government or its franchising authority; covering from its revenues or contract price all operating and investment costs; and, accepting some of the commercial risks. The railway franchising authority may retain responsibility for some functions, such as marketing. There are two main types of franchise namely, “gross service cost” and the “net service cost” franchises. Table 3.9 sets out the features of these.

### (c) Infrastructure Concessions

Infrastructure concessions are agreements whereby operators construct or refurbish infrastructure and then operate a facility or provide a service for a fixed period. Normally operators cover investment costs and carry the commercial risks.

**Table 3.9. Gross and Net Service Franchises**

In **Gross Cost Service** franchises all revenue accrues to the government and the contracts are usually let on the basis of the lowest cost supplier. The franchisees carry cost risk but no revenue risk. Competitive pressure can be increased by reducing, both the size of the packages and the duration of contracts. Instead of concessioning whole systems individual facilities or services can be franchised, usually by competitive tender. Competition is based on the cost at which bidders offer to supply the required service. The payment for the contract period is determined by the bid cost.

This form of franchise permits consistency with any government pricing scheme or policy (because revenue accrues to the franchiser), and with any requirement for service integration. It is capable of generating substantial competition, and reducing operational costs. The limitation is that the operator has little incentive either to generate or to secure revenue.

There are a number of requirements for gross cost service franchising, on the basis of competitive tendering, to work effectively, namely:

- the industry structure needs to be prepared so that there are a number of potential bidders.
- an efficient way of securing revenues must be devised. This may involve the inclusion in the contract of an obligation to use a selected method of secure revenue collection and recording.
- performance must be carefully monitored to ensure that operators provide all the services for which they have been contracted.
- collusion in bidding must be made illegal and be controlled.

**Net Cost Service** franchises involve the franchisee retaining all fare revenues. The franchise may be let on the basis of the highest premium bid or, on the basis of the lowest required subsidy from government. Such franchises provide an incentive to generate demand and the franchisee has to accept both revenue and cost risks.

The main requirements for net cost contracting are as follows:

- the industry structure must be prepared as for net cost contracting; and
- there must be careful monitoring of firm behaviour.

It is possible to identify eight main restructuring options defined by the degree of vertical separation and the extent of private sector participation in the provision of the infrastructure and the operation of train services. The appropriateness of a particular option will depend upon the extent to which it satisfies the agreed objectives of railway restructuring. Table 3.10 sets out the restructuring options and provides an indication of those that meet the objectives given in table 3.5.

| <b>Table 3.10. Alternative Railway Structures and Possible Objectives</b> |     |     |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|-----|-----|
| <b>Objectives</b>   |     |     |     |     |     |     |     |
| Structure   | I   | II  | III | IV  | V   | VI  | VII |
| Vertical Integration with State Ownership                                 | no  | yes | no  | no  | no  | no  | no  |
| Vertical Integration with Commercialized State Firm                       | no  | no  | yes | yes | yes | yes | yes |
| Vertical Separation with Commercialized State Firm                        | no  | no  | yes | yes | yes | no  | yes |
| Competitive Access with Concessions                                       | yes | yes | yes | ?   | yes | no  | ?   |
| Vertical Separation with Concessions                                      | yes | yes | yes | ?   | yes | no  | ?   |
| Vertical Integration with Privatization                                   | yes | yes | no  | ?   | no  |     | no  |
| Competitive Access with Privatization                                     | yes | yes | no  | ?   | no  | no  | no  |
| Vertical Separation with Privatization                                    | yes | yes | no  | ?   | no  | no  | no  |

**Note Objective:**

- I Maximization of the proceeds of Railway Restructuring and Reduced Budget Outlays, and Lower Subsidies - where there is a need to maximize the proceeds of disposing of state assets and minimize any on-going subsidy requirements.
- II Operational and Cost Efficiency.
- III Resource Allocation and External Efficiency - arising from setting prices at marginal social cost
- IV Innovation, Market Development and Dynamic Efficiency – due to innovation from technology - improving investment policies.
- V Social Equity - from ensuring transport services for poorer social groups.
- VI Environmental Protection and Optimal Modal Mix - in terms of the co-ordination of railway use and development with other modes of transport.
- VII Risk Minimization - in terms of maintenance of services over time and the risk of default.

Question mark (?) indicates that it is not immediately obvious whether structure will achieve objective.

The current emphasis on fiscal and cost efficiency explains the widespread use of the policy of privatization, both by a system of concessions and by direct sale of railway assets to the private sector. Public service obligations and other equity related objectives are now often met by combining vertical separation with concessions or access arrangements. Hence, most countries have opted for concessioning their rail services and, in some cases, even their rail infrastructures, to private firms in exchange for a fixed payment.

In summary, since there are significant barriers to entering the market for railway services and the efficient scale of operation is large relative to the market, it is relatively difficult to create 'competition in the market'. One possible way forward is to create 'competition for the market' which can be described as developing private operations within a framework of public regulation and control. Competition in service provision can be effected through the selling of route franchises for both profitable and unprofitable railway routes. Regulation over safety, service quality, and, prices can be retained whilst using competition to secure the lowest cost operator for a fixed time period. Further, introducing different operators on the same or competing routes and maintaining competition with alternative modes can produce significant benefits.

#### **Section IV** **Strategic Implementation**

Strategic implementation is concerned with translating the general direction of the restructuring strategy into an action plan. Implementation can be thought of as having several elements.

*Resource planning* involves determining the logistics of implementing the proposed method of railway restructuring. What are the key tasks that need to be carried out? What changes in the resource-mix of the industry need to be made? What sort of network and rolling-stock will be required, and when by, and who will be responsible? These are some of the questions that need careful consideration. Changes to the structure of the railways are inevitable and the proposed *Organization Structure* needs to be fully described and the roles and responsibilities of the new organizations need to be documented. There is also likely to be a need to adapt the *Systems and People* used to manage the sector. Marketing, pricing, sales, and customer service skills will be urgently needed on the restructured railway. People prepared and willing to act and react quickly and flexibly to meet changing market demand conditions are essential<sup>30</sup>. If they cannot or will not, business will be lost to the competition, perhaps irrevocably. Can such people be hired in-country, from other commercial enterprises; can existing railway staff be trained and, if so, what types of training are required; are consultants necessary, both to serve as expert staff for an interim period, as well as to train; can special arrangements be made with local universities to prepare students for careers in railway marketing, sales, and customer service? If the latter option is selected, the railway must be prepared to pay competitive salaries lest other businesses bid these graduates away. This provides an example of the critical need for freedom for the railway to hire and fire and to train and develop its personnel without regard to Civil Service regulations. Similarly, most state-

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<sup>30</sup> Huff, Lee W. and Thompson, Louis S. Policy, *Techniques for Railway Restructuring*. Research, and External Affairs Working Papers WPS 380. March 1990. Transport Infrastructure and Urban Development Department. The World Bank. Washington D.C.

owned railways that become commercial enterprises will need a significant up-grading in the ability to measure the cost of their services. An accurate knowledge of costs is the key to the identification of traffic and services which can earn a profit (or contribution to net income) above costs. If the objective of the restructured railway is to maximize such desirable traffic and services while eliminating those which cannot pass this test. As with the marketing and sales skills noted above, special efforts may be needed to put people with these skills and relevant computer support in post as quickly as possible.

The implementation plan must identify the sort of top management leadership needed to infuse all areas of the railway with the new entrepreneurial spirit, and to focus them all in integrated way on a shared commercial objective, is available or identify a way to find them. Special incentives may be needed to attract and retain such people.

The internal culture required in a railway that accepts the challenge of operating as a commercial enterprise also extends into the operating and engineering departments. Most railways have been "production led", that is, focussing on service delivery irrespective of whether the services were in full adequacy with customers' transport requirements. A commercially oriented or market led railway, on the other hand, focuses on the customer's demand for services and develops the optimum resulting combination of price and cost needed to meet the customer's transportation requirements (even if this implies that costs are not minimized). Quality in railway operations depends on having railway operational personnel who are sensitive to costs and to the needs of the shipper or passenger. The difficulty involved in achieving the necessary changes in operating and engineering skills and attitudes should not be underestimated.

## **Section V**

### **Restructuring and Regulation**

There are a number of reasons why it is sensible to retain a degree of public control of the right to supply railway services:

- (a) it may be that the duplication of rail operators on a given route is wasteful or impractical. The existence of indivisibilities in capacity provision could lead to the emergence of a 'natural monopoly' with its associated adverse consequences;
- (b) it may also be that unregulated competition could lead to undesirable practices such as frequent timetable changes; carriage overloading; and, volatile fares; and
- (c) direct competition could lead to the loss of particular services, which perhaps benefit poorer communities, for the reason that they are not viable without cross-subsidization or government grants. In such circumstances, it may be desirable to create competition for the right to provide subsidized services, at least cost.

Such imperfections give rise to the need for control but do not necessarily justify continued state operations or the granting of monopoly franchises. Indeed the scope for private sector management in railways is considerable.

Restructuring with the use of concessions and franchises is often favoured because it allows the government to retain ultimate control over the assets while the private sector carries out day-to-day operations according to some pre-specified rules devised in a contract. The important institutional prerequisites for a successful franchising arrangement, include:

***Operations and franchise management must be completely separated.*** Where both remain in public ownership they should be organized in parallel and not hierarchically. Where enterprises remain in public ownership and especially where they are involved in some activities which are directly subsidized on negotiated contracts there must be a procedure for independent auditing of their bids to ensure that they are not using cross subsidy to support their activities in the competitive markets.

***Restructuring should be undertaken prior to franchising.*** Even if it is not possible or desirable to move to complete privatization of an existing parastatal it is necessary to find some institutional basis for competition. This might involve:

- (a) the corporatization of the parastatals into a number of legally separate profit centres;
- (b) the removal of any legal barriers to the establishment of private enterprises in the sector;
- (c) positive action to create associations of private operators capable of participating in competition; and
- (d) the vertical separation of state operators from any ancillary activities in which a monopoly remains.

***The managing agency should be placed at arms length from local government.*** This is necessary both to increase the professionalism of the procurement process and to generate confidence in the commercial nature of the competition for franchises. This will usually require the creation of a concessioning agency at arms length from political control, but acting as the agent of the procuring authority. The agency could have a performance agreement with the political authority, or could itself be contracted out on the basis of a management contract.

There should be a ***separation of technical regulation from economic regulation*** Technical quality control should normally be vested in an agency independent of either the operators or the franchising agency.

The issues *identified* above highlight some important institutional requirements for a successful concessioning arrangement:

First, there must be an ***expert concession design team***. Where the contract either fixes the tariffs to be charged, or provides for any form of public intervention in tariffs, the arrangements for price formation and payment adjustment should be clearly stated in contracts. There must also be an ***independent regulatory agency***. The functions and powers of the regulatory agency must be clearly defined by law. It must have clear rights

to monitor the terms of concession contracts, including the right to receive specified operational and financial information. Any other modification of the terms of concession contracts should be negotiated, not enforced. Thirdly, an *effective legal basis* is necessary as a basis for the attraction of international capital into national infrastructure markets. Provision for recognized international arbitration of disputes may be extremely important.

The public sector also has a number of important roles in the establishment and implementation of a competitively tendered franchising system, as set out in table 3.11.

| <b>Table 3.11. Role of the Public Sector in Implementing a Competitive Railway Franchising System</b>   |
|---|
| <p><b>The Government's Role should include:</b></p> <ul style="list-style-type: none"> <li>➤ <b>Creating a Competitive Market Structure</b><br/>Developing a successful service franchising arrangement requires the establishment of a competitive structure in the industry. Sometimes this will necessitate the fragmentation and corporatization of an existing parastatal monopoly, which will usually require legislation.</li> <li>➤ <b>Franchising Arrangement Design</b><br/>Selecting the form of franchising arrangement to be employed and designing the contracts appropriately is an important residual role of government.</li> <li>➤ <b>Procuring Services, and Monitoring Contract Performance</b><br/>The procuring services, and monitoring contract performance, is usually undertaken by a specialist professional agency working on behalf of the franchising authority.</li> <li>➤ <b>Contract Enforcement</b><br/>Enforcing contracts, which may mostly be through persuasion, negotiation and discussion between the procuring agency and the service supplier, but must ultimately be a matter of law. The right of the procuring agent to terminate a franchise on the basis of properly specified performance criteria is an important element in the smooth and non-litigious operation of a franchising regime.</li> <li>➤ <b>Policy Co-ordination</b><br/>Policy coordination may be necessary; especially where there are significant interaction between sectors or other external effects.</li> </ul> |

The main factors to be addressed in designing a concession contract are:

**Contract Type** – the size and scope of the package needs to be determined depending on the economies of scale and scope and the existing potential for competition. A country's geographic characteristics will influence the scope for horizontal concessions based on existing routes and networks. The extent of any vertical concessions will be determined by function according to the characteristics of the networks and current state of infrastructure and new investment required. Indeed it is possible, again depending on local circumstances to design a mixture of vertical and horizontal concessions depending on profitability and the financial constraints faced by potential bidders. Similarly, concessions that combine freight and passenger traffic may be appropriate depending on market size and share.

**Contract Award Procedures** – the regulator or relevant authority may reduce risks by carefully specifying the pre-qualification requirements; the type of auction; explicit rules for auctioning; and, the selection criteria to be used in determining the successful bidder. Selection should be based on the aims of government and the relative importance of fiscal, equity and efficiency objectives.

**Duration** – the length for which contracts are given can be set again according to the objectives of government. Shorter contracts will create more robust competition however the incentive for firms to invest will be diminished. On the other hand longer contracts will encourage investment but reduce enforceability. Re-auctioning at renewal will be preferable to automatic renewal in terms of increasing market and competitive pressures.

**Contract Contents** – the contract should clearly set out the service obligations; performance requirements and payment conditions placed on the recipient of the concession. Similarly, the contract should clarify the exclusivity and compensation for public service provision conferred on the concessionaire. The contract must describe how risk is to be shared between the government and the operator through the use of either net cost or gross cost mechanisms. Provisions must also be made for determining the ownership rights in respect of the assets both during and the termination of the contract.

**Price Control** – the need for price control will depend on the extent of any monopoly power possessed by the concessionaire and the social objectives of government. Ideally marginal cost will form the basis of any price regulation combined with some form of price capping scheme. In general, price discrimination should be preferred to the use of cross-subsidization to secure the financial objectives of concessionaires.

**Quality Regulation** – the regulation of quality in the rail industry can be effected through defining the service levels to be achieved in terms of service frequency; monitoring performance against scheduled departure and arrival times; and reliability. Safety standards and externalities, both generated and avoided, on competing modes can also be specified and monitored<sup>31</sup>. The contract could also specify the level and quality of investment to be made by the concessionaire and describe the methods of quality control to be used.

**Infrastructure** – the contract should specify the conditions and prices for access to the rail infrastructure, including track and terminals. In addition, any requirements in terms of co-ordination and inter-modal competition and connectivity should be determined at the contract stage.

The drafting of the terms for bidding and the contractual conditions provide the main opportunity to achieve the main objectives set by policy-makers.

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<sup>31</sup> Button, K.J. “Privatization and Deregulation: Its Implications for Negative Transport Externalities” 1994. *The Annals of Regional Science*, 28.

In terms of the actual concessioning procedures for train services the government or its franchising authority should draw up a shortlist of suitable firms that could then bid for a fixed term franchise or concession. Their bids could either be in terms of the maximum fee they would pay, or the minimum subsidy they would accept to run a service. This means that the auction should be in terms of a total rental or subsidy per route, rather than in terms of a levy or subsidy per passenger.

Where railway restructuring involves the full or partial vertical separation of the rail infrastructure from train services, with significant private participation through concession contracts, price regulation is essential to limit the potential abuse of market power by concessionaires. It is therefore necessary to define the mechanism for price regulation in the concession contract.

Economic theory suggests that regulators should ensure that railway fares are equated with marginal social cost if monopolistic abuse of market power is to be avoided and economic efficiency is to be realized. In practice, however, the marginal cost pricing rule entails significant measurement difficulties and due to large economies of scale in railways, may not yield financial profitability. Price discrimination policies, for example, were, and still are, common in transport, either by passenger type (students or elderly tariffs, frequent or commuter travelcards), number of consumers (group discounts), type or volume of freight (cargo rebates for some goods) or by time in the day or season (peak-load prices). The use of two-part tariffs, with one fixed component and a variable one, is also a common tariff policy in which each unit of consumption (for example, a single trip) is priced differently. All these methods allow for greater flexibility for the railways and increase their revenues without much affecting demand or their costs, but both their social acceptability and the informational requirements they demand can limit the extent of their application. Therefore, price regulation can be effected by a number of standard price control mechanisms, the most common being 'rate of return' regulation and 'price capping'. Both price control methods should account for: (a) the degree of monopoly power effectively conferred to the operator; (b) the extent of the government's non-commercial objectives; and (c) the possible existence of limiting factors, such as inter-modal competition.

Depending on the extent of vertical separation, the operators of train services may either be directly responsible for the provision and maintenance of the railway infrastructure or alternatively buy access rights to use the infrastructure. Infrastructure includes the stations; terminals; track; and signalling which are characterized by longevity; joint use, scale economies and indivisibilities<sup>32</sup>. Such complexities mean that the pricing of railway infrastructure is difficult in both conceptual and practical terms<sup>33</sup>. The problems to be addressed are the same regardless of who is responsible for supplying the infrastructure. In the case, where a single entity provides both the infrastructure and the train services, the task is one of cost allocation. On the other hand, in the case where separate entities are involved, it is matter of determining the charges to be levied by the entity responsible for the infrastructure for access to the rail tracks and stations by train operating companies.

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<sup>32</sup> Dodgson, J., "*Access Pricing in the Railway System*", 1994. Utilities Policy, 4.

<sup>33</sup> Bureau of Industry Economics. *Issues in Infrastructure Pricing*, 1995. Research Report 69, Canberra, Australian Government Publishing Service.

A rail *Regulator* is usually required to protect the public interest and control the award and operation of concessions.

In principle, the Regulator should ensure that any charging framework should have the following key characteristics:

**comprehensibility** - the structure should be understood by the industry participants whose behaviour it is meant to influence and should not impose undue transactions costs to identify the appropriate information;

**transparency** - the structure should provide clear information to industry participants on the make-up of charges, and hence not confer undue advantage on particular industry participants, e.g. through information asymmetry;

**stability** - charges should not fluctuate or alter in arbitrary or unpredictable ways, except where significant short term cost changes are being signalled - if congestion (scarcity) pricing is introduced, short run prices could be unstable but predictability about future average levels could be given in some cases by establishing a long run avoidable cost around which short run prices might be expected to fluctuate;

**measurability, cost effectiveness and objectivity** - the data required to derive charges should be objectively measurable, cost-effective to collect and unambiguous to apply; and

**cost reflectivity** - in order to meet the objective of economic efficiency, charges will need to be cost-reflective.

The costs that underpin infrastructure charges should consist only of those elements which are relevant to the specific pricing, investment, or operating decisions under consideration. Price signals for the efficient production and allocation of railway infrastructure resources should be based on the avoidable (marginal) costs of changes in the use of the existing network and changes in the network itself. There are a number of characteristics of the railway network which result in avoidable costs varying according to the place and the time period in consideration. In particular, railway infrastructure is intensive in assets which are "lumpy" to install and renew, with long economic lives. This means that, in practice, charges may need to signal the corresponding avoidable costs associated with significant and sustained changes in demand, in order to generate appropriate practical measures of incremental costs which at the same time provide meaningful investment signals and incentives. However, because capacity is indivisible and fixed in the short term, were charges to be based on long run costs and specifically, where these are lower than those based on short run costs, this would lead to demand exceeding supply in the short run. Where there is excess demand the price mechanism by itself may not be able to balance supply and demand without very high charges in the short term.

The above analysis suggests that charges for railway track infrastructure should account for the following:

- (a) all the components of charges should be derived and calculated on a route basis;
- (b) all charges should cover the variable components such as track usage, electricity for traction when used, and congestion costs, and, in the long term, revenue from all charges should cover total route-based long run incremental costs; and
- (c) route based costs should be recovered in relation to the level and nature of track access rights.

If the sum of route-based track access charges fail to cover the total revenue requirements of the infrastructure operator, then the most efficient method of recovery needs to be determined.

The control of track access, pricing and development of infrastructure is an inevitable part of any rail industry where vertical unbundling is combined with a degree of private participation in the provision of train services has been achieved. In such cases, the ultimate goal of regulation should be to ensure that infrastructure access and its pricing promote an efficient structure of production, use and consumption of the transport services, while allowing network providers to make a sufficient return. For a further guidance on the regulatory requirements of railway restructuring see *The Economic Regulation of Transport Infrastructure Facilities and Services: Principles and Issues* published by ESCAP<sup>34</sup>.

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<sup>34</sup> *The Economic Regulation of Transport Infrastructure Facilities and Services: Principles and Issues*. 2001. UNESCAP. Bangkok.

## **ANNEXES**

Annex I: Railway Restructuring in Selected Countries of the ESCAP Region

Annex II: Railway Restructuring: The European Experience

## Annex I

## **Railway Restructuring in Selected Countries of the ESCAP Region**

### **Introduction**

Many countries of the ESCAP region either recognize the need to reform their railways or have commenced a programme of restructuring in recent years. The scope and pace of any restructuring and its implementation are highly dependent on the nature of the services provided by each individual railway entity; the weight of the social or development goals assigned to railways by their respective governments; the degree of managerial autonomy that railway managers can expect from their governments; and, the financial resources that governments can allocate to the process. Irrespective of the importance of each of the above elements, restructuring aims to end a cycle of under-investment, increasing indebtedness, poor customer service and rapidly deteriorating economics through the transformation of railways into customer-driven enterprises that are outward-looking, business-oriented, and run by managers with devolved authority and financial accountability.

This chapter describes the current state of railway restructuring activities in selected countries in the ESCAP region. Specifically, it identifies the problems that reform is designed to remedy; the aims of restructuring and its provisions.

### **Section I Railway Restructuring in the Region**

In the ESCAP region there are a number of important factors that favour the development and promotion of rail transport, including:

- (a) twelve countries in the region are landlocked with the nearest ports often being several thousands of kilometres away;
- (b) the distances linking the main origins and destinations, both domestically and internationally, are of a scale on which railways have comparative economic advantage;
- (c) there is a reliance on maritime transport to connect national economies to world markets with the associated need to clear landside port areas quickly to avoid worsening congestion;
- (d) a number of countries are major exporters of mineral resources in the transport of which railways can play a crucial role;
- (e) the continuing growth in the overall volume of cargoes being traded; and

- (f) the use of railways by many governments to implement a number of social policies, particularly in terms of environmental sustainability.

However, enthusiasm for the inherent qualities of rail transport and the potential benefits to be derived from its greater utilization is tempered, and often offset, by the recognition that railways are costly to operate and that governments are facing increasing difficulties in allocating adequate resources to maintain, let alone develop, them. With this in mind, and often prompted by international financial institutions tying assistance to reform, many governments have started to study measures to restructure their railways, in some cases, with private sector participation.

The following sub-sections provide an overview of the aims of railway reform and the implications of railway restructuring for selected countries in the ESCAP region. They only concentrate on the most salient features as, understandably railway restructuring has a very wide reach.

**(i) Bangladesh**

Table I.1 outlines the key features of recent restructuring policies in Bangladesh.

| <b>Table I.1. Bangladesh</b>                       |  |
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| <b>Problems of the Railways and aims of reform</b> | <p>In the early 1980's, Bangladesh Railway (BR) faced aggressive competition from road transport, ageing assets, widespread fare evasion, overstaffing and overall deteriorating financial and operational performance. Reforming BR had become urgent and with the assistance of the Asian Development Bank, the Government of Bangladesh launched a Railway Recovery Programme (RRP) aiming at:</p> <ul style="list-style-type: none"> <li>- institutional reform;</li> <li>- labour rationalization;</li> <li>- termination of open-ended subsidies; and</li> <li>- the adoption of a rational investment programme.</li> </ul>   |
| <b>Institutional framework</b>                     | <p>The institutional framework under which BR had been operating was reviewed with the following two implications; (i) BR was to be operated on a commercial basis, and (ii) through a Public Service Obligation (PSO), agreement, the Government of Bangladesh would compensate BR for the provision of non-remunerative passenger services. Under the new structure, the government formulates national transport policies, sets safety standards for BR operations, approves BR's long-term investments and arranges for the necessary funding. Meanwhile, BR determines the policies relating to railway operation within the framework of the national transport policy, ensures accountability of BR management and fixes BR's long-term strategy.</p> |

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| <p><b>The separation of infrastructure management from railway operations and market access for new operators</b></p> | <p>Bangladesh has not separated infrastructure management from railway operations and has not provided market access for new operators. In support of commercialization, BR has created a Marketing and Corporate Planning Department. The ‘corporate planning’ arm of the department assists all BR departments in the development of their investment proposals in a form consistent with BR’s annual investment plan, while the marketing arm of the department sets the strategy for freight and passenger sectors, sets the levels of service, sets tariffs and contractual terms and conditions, monitor traffic profitability and level of service attained, and produce BR’s marketing plan. In the freight sector, this has led in the shedding of uneconomical short distance traffic such as sugar cane and a focus on more lucrative services such as containers and petroleum products.</p> |
| <p><b>The financing of public service obligations (PSOs)</b></p>  | <p>To terminate the system of open-ended subsidies, the Government of Bangladesh has agreed to compensate BR for the loss incurred in operating services whose existence rests on social or political consideration. In a different sphere, regular freight tariffs are also being applied to the government’s postal services and to military freight traffic. In addition, BR has been running a number of services that have little or nothing to do with the business of operating train services, such as, schools and hospitals that should logically be run by the relevant ministries of education and health. Paralleling the PSO agreement, the Government of Bangladesh now covers the related expenses of non-core activities through a welfare grant paid to BR annually on the national budget.</p>  |
| <p><b>Improvement in the finances of railway undertakings</b></p>   | <p>BR has implemented a policy of cost-identification and market-oriented tariff adjustments. In the past rail tariffs were adjusted as a part of the government’s budgetary process. As a result, freight rates and passenger fares had fallen well below cost recovery level, thereby contributing to the deterioration in BR’s finances.</p>  |
| <p><b>Private sector participation.</b></p>   | <p>BR has identified a number of areas for partnerships with the private sector. In passenger operation, BR has leased out to private entities the commercial activities of 44 passenger trains with the result that related revenue earnings from these trains increased by 57 per cent. Also, in 1997 BR outsourced to the private sector on-train inspection and coach cleaning on 18 intercity trains with more trains to be operated under similar contract in the future.</p> <p>Similar ventures are taking place in the cleaning and refurbishment of rolling stock and infrastructure. Meanwhile, Grameen Phone, a private company, is hiring the spare capacity of BR’s fibre optic telecom system. In addition to an upfront payment and an annual rental fee, Grameen Phone also ensures the maintenance of the system at its own cost.</p>  |

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| <p><b>Other</b></p> | <p>An important factor contributing to BR's financial deficit in the past had been the rapid growth in employee costs with wages and allowances absorbing more than 80 per cent of total revenues. Acknowledging this situation and its implication on BR's future, an important component of the RRP was the downsizing of the 59,400-strong workforce through a temporary freeze on new recruitment and the implementation of a Voluntary Staff Separation Scheme. The scheme, implemented under an ADB loan, allowed 10,100 staff to opt out of the railways and its success has been a determining factor in bringing down BR's workforce by 45 per cent, i.e. from 59,400 to 33,000, in slightly over ten years. A series of other measures were implemented to enhance BR's productivity and commercial viability including the disposal of surplus and obsolete assets, especially condemned rolling stock, the closure of unprofitable branch lines, the conversion of poorly-patronized stations into unattended halts and a policy to curb fare evasion.</p> |
|---------------------|--|

**(ii) Cambodia**

The Royal Railway of Cambodia (RRC) are a case apart in the ESCAP region in as much as the network has yet to recover from the destruction wreaked upon it during the civil war in the 1970's. Infrastructure and rolling stock were heavily damaged and a lot of staff lost their lives. The result is that, in 2002, RRC was operating only 7 trains a day on just two lines at a speed not exceeding 35 km/h and sometimes even lower compared to 37 trains a day before political instability set in.

RRC's network comprises of the two lines: (i) the 337-km line from Sisophon to Phnom Penh and (ii) the 264-km line from Phnom Penh to Sihanoukville. The conflict damaged 200 km of line section and 47 stations on the first line while 48 bridges and the telecommunication system were destroyed. On the second line, 110 km of line section and 24 stations were damaged and the telecommunication system was also rendered inoperative. In addition, on the second line, flooding and seawater reportedly destroyed 16 bridges.

In this context, restructuring RRC meant, firstly, reconstructing the damaged infrastructure and restoring operations along the network's two main lines and, secondly, developing services likely to attract shippers. Commercial efforts are being directed towards distributing freight to and from the port of Sihanoukville. In the medium-term, the restoration of the 48-km line section between Sisophon and Poipet would link RRC's network with the railway network of Thailand and would allow the railways to tap into the potential offered by increasing cross-border trade between the two countries. Meanwhile, in the long-term, construction of the 255-km section between Phnom Penh and Loc Ninh (Viet Nam) would allow connection between the two countries and, more significantly, would allow uninterrupted rail connection between Singapore and China, albeit with a break-of-gauge between China and Viet Nam. This would mark the completion of an important route of the Trans-Asian Railway and a main component of the subregional rail network pursued by the ASEAN secretariat under the Singapore-Kunming Rail Link project.

**(iii) China<sup>35</sup>**

Given the size of the country, its huge population and the uneven distribution of natural resources and industrial centres, Chinese Railways (CR) play a role in the social and economic development of China that is unequalled by other transport modes. Recent economic growth has further enhanced this role. Although this represents an opportunity for CR in terms of business development, it also constitutes a challenge in so far as a drop in performance could impact on the country's growth. In this context, the Government of China has taken, over the past years, a number of steps to initiate in CR a process of change and these are set out in table I.2.

| <b>Table I.2. China</b>                            |  |
|--|--|
| <b>Problems of the Railways and aims of reform</b> | <p>Railway reforms in China aim to: (i) meet the requirements of the national economy as regards transport capacity and quality of service; and (ii) establish a new form of administrative structure and operation mechanism adapted to the socialist market economy specific to China, during the tenth 5-year plan (2001-2005). The structural reform plan is directed towards:</p> <ul style="list-style-type: none"> <li>- separating the state control functions from the economic activities;</li> <li>- of the railways;</li> <li>- reforming the railway undertakings;</li> <li>- orienting the railway undertakings towards the transport market; and</li> <li>- creating a system of railway management and marketing in line with a socialist market economy.</li> </ul> |
| <b>Institutional framework</b>                     | <p>China's Railways are owned by the state and operated by the Ministry of Railways (MOR) with 14 regional administrations and no suburban railways. CR's restructuring has involved the redefinition of the role of government in the management of railways. One objective in the current 5-year plan is to reduce government involvement in the commercial aspects of CR and concentrate its role on overseeing rail policy development and system planning, and regulating rail safety. At a higher level, the government will also be active in establishing, implementing and controlling legal obligations of transport companies and transport market regulations.</p>   |

<sup>35</sup> Unless otherwise indicated the information in this section are taken from the two following documents:

- *"Promote marketing and increase transport revenue"*, Ministry of Railways, China, 2000; and
- Country paper, *"Chinese Railways progressing to the 21<sup>st</sup> century"*, International Cooperation Department, Ministry of Railways, China, 2002.

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| <b>The separation of infrastructure management from railway operations and market access for new operators</b> | <p>There is no separation of infrastructure management from railway operations and no market access for new operators.</p>  |
| <b>The financing of public service obligations (PSOs)</b>  | <p>There is no specific funding for PSOs.</p>   |
| <b>Improvement in the finances of railway undertakings</b>   | <p>Linked to the marketing efforts, is a move to reform tariffs, especially those relating to freight movements. Currently, CR's "current pricing approach is simple and does not vary much with commodity value or competition. To assist in this task, CR has developed Point-to-Point traffic costing models for passenger and freight whose purpose is to measure the costs of operating individual traffics in order to estimate their contribution to profitability. The use of these models help CR's in making decisions about the acceptance or rejection of these individual traffics, for which fare or tariff levels are established by market forces.</p>  |
| <b>Private sector participation</b>  | <p>However, during the ninth 5-year plan (1996-2000), the closed rail transport system dating from the days of the central economy was opened up and facilities and agencies fulfilling other functions than core railway functions were removed from the jurisdiction of the Ministry of Railways. This included social activities (e.g. hospitals, technical universities) and non-transport activities (e.g. railway engineering or rolling stock manufacturing plants). Altogether 800,000 people were thereby removed from CR's manpower some 300,000 jobs were retrenched in railway operation proper. As a result of these measures, CR's productivity improved substantially and revenues rose to a level at which CR became once again profitable for the first time in several years.</p> |
| <b>Other</b>   | <p>The competitiveness of CR and its ability to respond to changes in market demands are areas earmarked for improvement. There is an awareness among managers that railway transport no longer operates in a 'sellers market' environment in which railways can wait for customers but in a 'buyers market' environment in which services have to match customer's requirements. With this awareness comes a recognition that CR is adopting a marketing culture and practices with the proper attitude being reflected from managers down to the company's 'rank and file'. This will be achieved by separating the various components of the railway business, i.e. passenger, freight and other line-of-business entities, into business units with their own accounts.</p>                     |

**(iv) India<sup>36</sup>**

Since its inception in 1853 as a colonial organization with a 13-km track length, Indian Railways (IR) has grown to its present size of over 63,000 route kilometres across the length and breadth of the country, and its historic role in the country's post-independence social and economic development is well recognized. However, as it marks its 150<sup>th</sup> year of existence, IR faces a number of challenges. From a level of 60 per cent for freight traffic and 80 per cent for passenger traffic in 1950, IR's market share has now fallen to 40 per cent and 20 per cent respectively due to the development of competition from road and air transport. In recognition of this situation, the Government of India created a special committee, the 'Rakesh Mohan Committee', to review IR's performances and formulate recommendations to revitalize the organization so that it could continue to be an essential component of the country's transport system. Table I.3 describes the main reforms in Indian railways.

| <b>Table I.3. India</b>                            |  |
|--|--|
| <b>Problems of the Railways and aims of reform</b> | Competition from other modes (road, inland waterways, coastal shipping, air freight and pipelines) has forced IR to become a more user-friendly and market-oriented organization quick to respond to customers' needs. This is particularly important given that the government is increasingly unlikely to subsidize IR. In this context, the ability of IR to accelerate the growth of its revenues from both freight and passenger traffic is central to the success to restructure the organization and to finance new investments.  |
| <b>Institutional framework</b>                     | Indian Railways are state owned and operated and there is emphasis at present on developing more public sector under-takings under the Ministry of Railways. It has been the experience of IR that activities which enjoyed only peripheral attention within the railways, but which were important from the view point of contributing profits, have benefited by a process of corporatization. Successful examples of corporatization of public sector units under the Ministry of Railways are the Container Corporation of India (CONCOR), Rail India Technical and Economic Services (RITES) and Indian Railway Construction Co. Ltd. (IRCON) which have also been able to successfully expand their activities abroad. |

<sup>36</sup> Unless otherwise indicated the information in this section are taken from the two following documents:

- Report of the Rakesh Mohan Committee, 2001; and
- Country paper, "*Indian Railways, Challenges and Initiatives*", by Mohd. Jamshed, Executive Director Planning, Ministry of Railways, New Delhi, 2002.

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|   | <p>Two other public sector undertakings have recently been set up under the Ministry of Railways, i.e. Indian Railways Catering and Tourism Corporation (IRCTC) and Railtel Corporation of India. IRCTC which became functional in 2001-02, was set up to upgrade the rail tourism infrastructure, hospitality and catering services through joint ventures, franchises and other similar projects with the objective of maximizing revenues from the rail tourism and catering business, which had reached a static level. IRCTC has already launched innovative and customized travel packages in order to boost tourist traffic on Indian railways and has already given a new look to the onboard catering services. Meanwhile, RailTel Corporation of India Ltd. was formed in September 2000 with the objective of building a nation-wide broad band and multimedia network by laying Optical Fiber Cable along IR's right-of-way and leasing surplus capacity to outside agencies on a commercial basis. Beyond meeting IR's requirements in communication for operation control, RailTel will thus be an important player in the development of information technology and internet facilities in all parts of the country, continuing IR's historic role of national unification.</p> |
| <p><b>The separation of infrastructure management from railway operations and market access for new operators</b></p> | <p>There is no separation of infrastructure management from railway operations and no market access for new operators.</p>   |
| <p><b>The financing of public service obligations (PSOs)</b></p>  | <p>IR is expected to generate sufficient revenues to meet their working expenses and development needs.</p>  |
| <p><b>Improvement in the finances of railway undertakings</b></p>   | <p>IR's most important cost driver is its staff and a reduction in manpower is seen as an essential prerequisite to improved financial performance. Indeed, IR's consultancy, RITES, estimates that 25 per cent of IR's employees are surplus to requirements<sup>37</sup>. To address the issue, IR is reducing its staff at the rate of 2 per cent per annum by restricting the annual intake of new staff to 1 per cent while around 3 per cent of staff take retirement. To be successful the process has to continue over a period of seven to ten years<sup>38</sup>.</p>  |
| <p><b>Private sector participation</b></p>  | <p>Given the limited resources allocated by the government and the large funding requirements needed to complete all the ongoing projects within a reasonable time frame, IR is seeking other financial mechanisms to implement its investment programme. State Governments, beneficiary industries, port authorities, infrastructure companies and foreign direct investors are being considered as financial partners. A number of models for such investments have been proposed:</p>   |

<sup>37</sup> "Indian government ponders railway's future", International Railway Journal, March 2002, p. 15.

<sup>38</sup> "Indian Railways gears up to handle growth", Railway Gazette International, June 2002, p. 321.

|  |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>(i) For financially viable projects a special purpose vehicle (SPV) may be created with equity participation from IR and a private company. The concession period will normally be 33 years, possibly longer by mutual agreement. Such a mechanism has been created to finance the Pipavav Port gauge conversion/new line project aimed at facilitating access to and from the newly developed port on the north-western coast of the country;</li> <li>(ii) The BOLT Scheme envisages private participation by a consortium of construction contractors and financiers. To give sufficient comfort to lenders access charges will go into an escrow account through a tripartite agreement between the railways, the project sponsors and the lenders. An added incentive to the developers for early completion is the advance receipt of access charges; and</li> <li>(iii) For fast execution of projects in which State Governments are interested, SPVs as holding Companies may be created with equity partnership by the Ministry of Railways, the State Government concerned and national infrastructure financing institutions. For each project, a specific funding mechanism can be developed. Significant progress has already been made through the creation of joint ventures with State Governments. Memorandum of Understandings having been already signed between the Ministry of Railways and the Governments of Andhra Pradesh, Jharkhand and Karnataka for financing certain identified rail projects. Meanwhile, the Governments of Maharashtra, West Bengal and Tamilnadu have also participated in financing suburban infrastructure projects in their respective states.</li> </ul> |
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Freight is the key profit earner for IR and the organization has taken important decisions to attract more shippers to rail. One such decision is to reduce the cross-subsidization of passenger services by freight revenues, a trend which in the past had forced IR to keep freight rates at such high levels that some customers moved away from rail. This move is an important element in IR's policy to rationalize the freight rate structure and eliminate distortions that have crept in through a no-increase policy whenever such increases cannot be justified by added value to the customer. At the same time, volume discounts are being introduced, especially for shippers with back-haul cargo. Steps are also being taken to increase the organization's commercial and operational flexibility to address specific needs. This is visible in the acquisition of rolling stock dedicated to certain commodities such as steel and cars. Meanwhile, smaller rakes are operated for point-to-point movements. Interface with freight customers is also earmarked for improvement through the implementation of a Freight Operations Information System (FOIS) to monitor freight movements as well as activities at terminals in order to provide real-time information to customers.

IR is also actively developing efforts to increase its share of non-bulk traffic. The Container Corporation of India (CONCOR) is to play a major role in the attainment of this objective. CONCOR was set up as a public-private joint venture in 1988 to take over and develop IR's intermodal freight business. During the four-year period 1998-2001, while average growth for freight transport by IR was under 4 per cent, CONCOR experienced growth of 12 to 20 per cent. It serves over 40 terminals in the country and ensures door-to-door services through road and rail operations and through a number of logistics services such as cargo consolidation. It also provides a number of other value-

added services such as stuffing and unstuffing of containers, warehousing and Customs clearance. The latter is currently being improved through the development of information technology. CONCOR is also actively pursuing the development of efficient interfaces with other modes of transport, including with maritime transport through a more prominent presence in ports.

Despite its impressive freight traffic, IR has become increasingly passenger dominated. Under heavy pressure from public and parliament, new and expanded services are being provided at below cost, so that passenger operations currently account for 62 per cent of the transport task but bring in only about 28 per cent of revenue<sup>39</sup>. The central problem is that more than 90 per cent of traffic is in the low-fare segments. Therefore, the key challenge for IR is to maintain its obligations on the lower price services, while at the same time increasing both capacity and utilization of the premium services. In view of the ongoing changes in income distribution towards higher incomes in the country, there are realistic prospects for IR to obtain higher revenues from its passenger operation. IR has already responded to these changes by introducing new classes of passenger services such as the Jana Shatabdi inter-city services and AC 3 tier services on existing trains. IR is also improving the interface with passengers in the higher income bracket through the expansion of computer interfaces with passengers such as the use of smart cards and ATMs for season tickets, and the introduction of internet-based reservations.

In an effort to reduce its operating costs, IR is implementating a programme of rolling stock fleet improvement of freight wagons and passenger coaches. Substantially higher wagon productivity will be achieved through the phasing out of four-wheeler wagons and their replacement by eight-wheeler wagons, and the replacement of vacuum-brake eight-wheelers by air-brake ones. Other cost-cutting technological improvements include the introduction of composite brake blocks in lieu of cast iron brake blocks, stainless steel open wagons to overcome problem of corrosion, the reduction in the tare weight of open and tank wagons to increase payload, the introduction of higher axle load wagons, the provision of bogie brake system on all new wagon stock, the acquisition of wagons with a design speed of up to 100 km per hour and the introduction of new track-friendly bogies exerting less wear and tear on tracks.

Regarding passenger operation, through a technology transfer agreement with LHB of Germany<sup>40</sup>, IR has acquired the ability to manufacture lightweight passenger coaches with improved design characteristics such as stainless steel body, coach floor level adjusting arrangement, greater crash worthiness and a higher maximum speed potential of 160 km per hour. These coaches will contribute to IR's cost reduction policy while offering greater safety and comfort. Locomotives with higher haulage capabilities and reduced energy-consumption are also being developed under transfer of technology contracts with the objective of bringing down IR's energy bill that currently accounts for 24 per cent of operating costs.

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<sup>39</sup> "IR spends to redress problems", Railway Gazette International, Rail Investment 2000, p.24.

<sup>40</sup> "Indian Railways gears up to handle growth", Railway Gazette International, June 2002, p. 321.

**(v) The Islamic Republic of Iran**

The first Act approving the construction of railways in the Islamic Republic of Iran was passed in 1925. In 1976, the then Iranian Railway made a step towards financial independence when it was corporatized and became a state-owned company. However, the new constitution of the Islamic Republic of Iran adopted in 1980, stipulated that all large scale industries – including the Iranian Islamic Republic Railways (RAI) – were to be publicly owned and administered by the State.

In 1993, flexibility was introduced to allow corporatization of RAI and the country's High Council for Administrative Affairs instructed the Ministry of Road and Transportation and RAI to develop private sector involvement in its services. In 1994, the Council also mandated government departments to involve the private sector in the delivery of their non-core activities as well as core non-operational activities. In essence, this opened the door to private sector participation in activities relating to the building and maintenance of infrastructure, rolling stock, telecommunication systems, and the supply of components such as ballast and sleepers. It was not until 2000, with the third 5-year Economic, Social and Cultural Development Plan, that private sector involvement in the country's economy in general, and rail sector in particular, was opened up. This policy was introduced in recognition of the gap between the number and cost of projects earmarked for investment and the availability of resources. As regards ownership, however, the Act clearly asserts the state-ownership of assets.

Article 128 of the Act encourages the transfer of part of RAI's freight and passenger services (operation and maintenance) to the private sector and the establishment of joint public-private companies, while laying down a number of requirements, namely: (i) that track and stations should remain the property of the state, (ii) that policies must be formulated to ensure that railway activities are provided within a unique and interactive railway system, and (iii) that no private sector monopoly emerges from the process.

In July 2001, the approach was further refined with a clear indication of activities that could be available to the private sector. These activities fall into two categories, (i) construction services and (ii) maintenance and operational services with possibility that RAI could sell, lease or hire-purchase the properties linked to these activities. Furthermore, RAI can introduce its properties as its share in the joint ventures with participation not exceeding 49 per cent to ensure the private character of the enterprise.

In practical terms, the above has resulted in the following major changes.

- (a) **Passenger services** have been institutionally separated from the railway and a passenger business company, Raja Passenger Trains Co., was established to operate trains throughout the country using RAI infrastructure without any payment for its usage;
- (b) **Infrastructure and track maintenance** has been corporatized with, in the process, the transfer of RAI's former track department – staff and equipment – to the Iranian Railway's Sleeper Production Company. In parallel, RAI's buildings and stations management activities was also transferred to Iranian Railway's Ballast Company; and

- (c) **Freight traffic.** In the area of freight, an entity, Railway Cargo Services Company, is to be set up to take over freight activities. It will receive all relevant staff and equipment, including rolling stock.

The above initiatives have taken RAI through a process of corporatization as a step towards privatization whereby its responsibility as a state company would be limited to regulation, harmonization and control. In its approach to restructuring, the Government of the Islamic Republic of Iran has adopted a step-by-step approach starting the process with the privatization of non-core activities before moving to core activities and involving the private sector whenever beneficial to increase efficiency. Importantly, in restructuring its railways, the Government of the Islamic Republic of Iran recognizes the importance of supporting politically and financially the process of change over a number of years so that the gradual development of a business approach to railway operation does not come at the expense of reliability and safety.

#### (vi) **Russian Federation**

Russian Railway are undergoing changes in its structure. Before considering the steps taken and the proposals for reform, it is important to consider the size and structure of the market for the railways of the Russian Federation. The railways of the Russian Federation represent 60 per cent of the railways of the former Soviet Union. Despite traffic falling by more than a half since 1991, they are still one of the largest railway systems in the world carrying 1,100 billion ton-km annually - by comparison, the railways of the EU carried only 220 billion ton-km. In contrast, passenger-km in the Russian Federation (170 billion) are significantly lower than in the EU (303 billion).

Russia is a clear example of the need for intra-rail competition on the same tracks, since Russian Railways carry well over 80 percent of intercity ton-km in the Russian Federation, the lengths of haul are ideal for railways, there is not an adequate highway system to provide trucking competition, and Russia's sparse rail network will not support line versus line competition. The structure of the market for the railways of the Russian Federation differs significantly from the railways in the European Union (EU) in the following ways:

- (i) rail in the Russian Federation has a monopoly in most of the markets in which it operates and carries half of the freight ton-kms, this compares with only 8 per cent in the EU. Rail's dominance is because of the absence of competition from road, which carried only 7 per cent of freight ton-kms, compared with 35 per cent in the EU;
- (ii) the size of the network and average distances are far greater - the average distance of haul for freight in the Russian Federation is 1,200 km, whereas for the railways of the EU it ranges between 120 km and 400 km.; and
- (iii) the railways of the Russian Federation are predominantly freight railways: freight represents 75 per cent of total unit-km in the Russian Federation compared to only 46 per cent in the EU. Such traffics are predominantly bulk cargoes in high volumes.

These factors need to be considered when assessing the need and scope for reform in the Russian Federation.

At the end of the 1990s Russian Railways required structural reform for a number of reasons:

- (i) a refocus of rail services to reflect the changes in the economic structure of the country;
- (ii) lack of independence from the state. The Federal Rail Transport Law (1995) set out the relationship between the State and the railways. Under this law, the railways of the Russian Federation were unified under the direct management of the Ministry of Railways (MPS). As such, the degree of legal independence of the railways in the Russian Federation was limited compared to that in the EU. There were no provisions for the establishment of separate accounts for infrastructure management and operations or, for the granting of rights of transit and rights of network access for operators of domestic or international railway services;
- (iii) the inadequacy of the regulatory system since there was no differentiation in the regulation of potentially competitive and monopolistic services;
- (iv) frequent and unpredictable tariff and fare changes;
- (v) difficulties in co-ordinating de-centralization. Cost-based tariffs were set on the basis of rules defined by the Federal government or regional governments as in the case of suburban passenger transport. The 17 regional railways were federally-owned state enterprises. Each enterprise was designated as a profit centre with some control over capital expenditure - each was allowed to retain operating profits after tax and any compulsory payment to MPS, such as contributions to central funds and reserves and for the financing of general expenditure. Inevitably, the regional railways acted in their own interests and these may not always have corresponded to the interest of the railways as whole. A major challenge for MPS, therefore was, to improve the incentive structure for the regional railways;
- (vi) inadequate investment;
- (vii) over-staffing; and
- (viii) lack of funding for Public Service Obligations. The Regulator of Natural Monopolies in Transport (FSEMT) which was formed in 1997 had responsibility for the regulation of freight rates and passenger (excluding suburban) tariffs. An earlier law in 1995 had delegated responsibility for suburban passenger tariffs (and subsidies) to Federal republics and regional governments. However, Federal republics and regional governments had no money to pay subsidies and MPS continued to run loss making suburban services paid for with cross subsidies from freight.

In terms of the financial position of the railways the facts described had an adverse affect on the financial position of the railways. By 1990, it was apparent that measures were needed to remedy the situation, such as allowing MPS to close loss-making passenger services or receive from the State budget specific compensation payments for passenger services. There was general agreement on the need to separate the railway from government and on the eventual separation of infrastructure from operations. There was also agreement on the benefits of spinning-off suburban operations and the ending of cross subsidy to passenger services. Indeed, the Russian Federation set out proposed reforms which, if fully implemented would go beyond the EU Directives in terms of introducing competition. A Government Order on “Structural Reforms, Privatization, and Strengthening Control of Natural Monopolies” set out to produce:

- (i) an appropriate commercial governance structure for the administration of the railways;
- (ii) a rationalization of freight tariffs and prevent the railway from exploiting its monopoly;
- (iii) the replacement of cross subsidies from freight to passenger services with federal and local funding under contracts;
- (iv) a regulatory framework which reflects the degree of monopoly held by railways and to relax regulation as competition is introduced;
- (v) the privatization of rail equipment suppliers;
- (vi) the separation of non rail activities, and divest wherever feasible;
- (vii) the elimination of cross subsidies between freight and passengers, and provision of compensation for public service obligations from State resources and the allowing of tariff increases which will allow costs to be recovered on these passenger services;
- (viii) the establishment of separate accounts for infrastructure;
- (ix) the establishment of separate businesses for freight and passenger services with competition except for regional and commuter passenger transport; and
- (x) the encouragement of competition in rail transport by allowing other companies to operate under licence on a non-discriminatory basis.

In terms of implementation, the first stage in 2001-02 involved the corporatization of Russian Railways Limited (RAO RR) and the creation of functional sub-divisions for:

- freight;
- infrastructure maintenance and development;
- locomotive traction;
- long distance passenger services;

- seventeen regional suburban railways;
- maintenance of carriages and locomotives;
- construction; and
- research and development.

The second stage, 2003-05, involves increasing the volume of freight moved by private companies; the sale of maintenance companies to the private sector; and, the corporatization of the regional suburban railways.

In the third stage, 2006-10, choices will have to be made about whether to unbundled RAO RR by vertically separating infrastructure and train operations or create vertically integrated regional companies. In addition, methods of increasing competition on long distance passenger services; increasing private sector participation; and eliminating cross-subsidies will need to be effected.

Many other Governments in central and eastern Europe are following a similar path.

#### **(vii) Sri Lanka**

Table I.4 describes the current position in respect of the development of the railways of Sri Lanka.

| <b>Table I.4. Sri Lanka</b>                        |   |
|--|---|
| <b>Problems of the Railways and aims of reform</b> | <p>Since independence in 1948, Sri Lanka Railway (SLR) has functioned as a government department. Operating as a small unit on relatively short route distances, SLR has taken the full brunt of road competition in both the passenger and freight sectors and is now confronting serious financial problems. Due to inadequate funding, SLR has been unable to maintain its infrastructure and rolling stock to the optimum operational level. The result has been falling service standards which have reduced traffic levels and worsened SLR's financial position. At the same time, no resources have been available to allow SLR to adapt its services in market segments where it had a competitive advantage, and the company has been unable to develop services that were in demand such as container transport.</p> <p>Initiatives introduced by the government include:</p> <ol style="list-style-type: none"> <li>1. the modernization of freight services through the development of business units less dependent on public money;</li> <li>2. the development of new services such as in multimodal transport through private sector investments; and</li> <li>3. the introduction of greater financial discipline aimed at increasing efficiency and reducing costs.</li> </ol> |

|  |  |
|--|--|
| <b>Institutional framework</b>   | The above initiatives have been undertaken under the Government Departmental Structure. However, their implementation has encountered serious constraints due to the inherent weaknesses of the departmental framework. In 1993, the parliament of Sri Lanka passed a ‘Sri Lanka Railway Authority’ Act with an aim to introduce greater commercial flexibility into SRL. However, the best options and strategies for doing so are still being reviewed along with alternative mechanisms to facilitate public-private partnerships in rail operations.   |
| <b>The separation of infrastructure management from railway operations and market access for new operators</b> | The Government of Sri Lanka has approved the introduction of an Open Access Policy to encourage the utilization of unused track capacity through the development of services in collaboration with SLR. Through contract agreements, freight customers are able provide, maintain and operate their own trains while meeting a number of conditions and paying an access fee. Meanwhile, track infrastructure and train control remain the responsibility of SLR. The arrangement helps SLR address its shortage of motive power, as indeed the few locomotives available are often allocated to power passenger trains.   |
| <b>The financing of public service obligations (PSOs)</b>  | Deficits by SRL are financed by the government.  |
| <b>Private sector participation.</b>   | <p>SRL has entered into an agreement with a leading tour operator to operate special tourist trains in Sri Lanka. Two trains are operated under the original contract, namely the Viceroy Special and the Hitachi Deluxe. For the Viceroy Special, SRL renovated and re-conditioned a steam engine and special coaches at the cost of the contractor, while the contractor is responsible for the refurbishment of the interior fittings of the coaches. As regards the Hitachi Deluxe, the contractor is responsible for the sale of all tickets in respect of the special rail tours. The contractor, at its own expenses, does the sales promotion campaign.</p> <p>SLR has also signed agreements with two private sector entities for the maintenance and, when need be, renovation of two Colombo stations. SRL’s station and onboard catering services has also been outsourced to private sector agencies.</p> |
| <b>Other</b>   | Container transport is also expanding and is now managed by a dedicated company - Container Railway Freighters. In addition to the container terminal at Colombo, other terminals have also been established at three important tea plantations and plans are to establish another one in the Katunayake free port. The aim is to develop block-train container services.  |

**(viii) Viet Nam**

Built in the late nineteenth and early twentieth centuries, the Vietnamese metre-gauge railway network suffered heavy damage during the 30-year long conflict for independence and reunification. In 1976 with the return of peace and reunification, the then Department of Railways once again operated as a single system serving the whole country and was a major component in the rebirth of a national economy. Table I.5 describes the position of Vietnamese railways.

| <b>Table I.5. Viet Nam</b>                         |  |
|--|--|
| <b>Problems of the Railways and aims of reform</b> | <p>The railways have been owned, financed and centrally managed by the State with all revenues and expenditures reflecting government-assigned traffic tasks fulfilled at government-imposed rates with no concern for economic efficiency and customer requirements. Artificially-low rates could not cover operating costs and, paradoxically, as the railways carried greater numbers of passengers and higher volumes of freight, the financial situation worsened until it reached the point when subsidies became an unbearable burden on the state budget.</p> <p>In 1986, with the introduction of the "Doi moi" policy to move from a subsidized centrally-planned economy into a market-led economy, the Government of Viet Nam decided to modernize the country's transport sector and expand its capacity to better serve the needs of a developing economy. In this changing context of deregulation and with the resulting emergence of competition from other modes of transport, especially road, the Department of Railways became in 1989 the Union of Railway Enterprises of Viet Nam, or Vietnamese Railways (VR) for short, with the objectives of: (i) reducing its dependence on the State budget; and (ii) operating commercially.</p> |
| <b>Institutional framework</b>                     | <p>VR has established an arm's length relationship with the Government of Viet Nam and become autonomous in the planning and management of its business activities. To meet the above objectives, VR was restructured into four main entities:</p> <p><b>A Transport Block</b> consisting of 3 regional rail transport enterprises responsible for managing and providing rail transport services on the respective regional rail infrastructure and coordinating with the other regional rail transport enterprises to fulfil the transport tasks of the railway as a whole. The whole block carries out its activities as one big business unit. Besides their core activities of moving passengers and freight, the regional rail transport enterprises were authorized to expand non-core businesses in order to utilize staff that were surplus to requirements.</p>  |

|   |  |
|---|--|
|   | <p><b>An Industry and Construction Block</b> including rolling stock workshops, mechanical factories, stone quarries and railway construction companies. They are all independent entities running their activities as independent businesses based on the national law on State Enterprises of the Socialist Republic of Viet Nam. The block carries out construction of railway infrastructure and manufacture and overhaul rolling stock on behalf of the Transport block on the basis of a contractual relationship. The Infrastructure Management Block consists of the railway infrastructure management and maintenance enterprises having national, regional or departmental jurisdiction over VR's fixed assets such as rail bridges, tracks, telecommunication system, signaling, stations. They were gradually set up and in 1995 were financially separated from the Transport block, and authorized by the State to manage the railway infrastructure. They are all public service enterprises, carrying out railway infrastructure maintenance activities according to the approved annual maintenance plan with respective resources allocated on the State budget.</p> <p><b>The Rail-Related Services Block</b> consists of railway material/ equipment import-export, consulting, and tourism and transport service companies. They are all independent entities operating commercially.</p> <p>Within the above framework, the Transport block delivers VR's core activities, while all other blocks are supporting entities providing services to the Transport block on a supplier-customer relationship based on commercial contracts.</p> |
| <p><b>The separation of infrastructure management from railway operations and market access for new operators</b></p> | <p>Since 1995, infrastructure and operation have been operating separate accounts. VR is responsible for operating and providing rail services on a commercial basis and pays an infrastructure usage fee fixed at 10 per cent of the annual transport revenues. VR has been granted the power to set and change passenger fares and freight tariffs according to market conditions, and pays taxes like any other enterprise in the country.</p> <p>Railway infrastructure is owned by the State which finances its maintenance and renewal, and provides the necessary investment resources for network expansion and upgrading. However, given the resource constraints and the fact that, at this stage, VR is the only operator, it has been authorized by the State to manage and operate the railway infrastructure in order to best integrate the railway transport requirements business with network improvement.</p>  |
| <p><b>Improvement in the finances of railway undertakings</b></p>   | <p>In 2000, VR increased its turnover by 29 per cent due to a 36 per cent increase in ton-kilometres and a 17.6 per cent increase in passenger-kilometres. In 2001 turnover increased by a further 22.8 per cent. The tariff structures for passenger fares and freight rates have been revised so as to reflect cost-recovery, competition, service standard, and the need to optimize profit.</p>  |
| <p><b>Other</b></p>   | <p>VR has adopted measures aiming to manage its core activities along business lines with the adoption of commercial accounting management systems and the establishment of a marketing entity. In passenger, this has resulted in enhanced quality of operation through much faster transit times and improved punctuality for passenger trains.</p> <p>Through its staff rationalization programme, VR reduce its manpower by over 30 per cent from 60,000 to 40,000 staff.</p>  |

VR recognizes that a number of structural issues still need to be addressed before the restructuring process is completed. Some of the most important challenges are to:

- (i) **Obtain greater financial autonomy.** Although steps have been taken towards its corporatization, VR has still not gained all the attributes of a financially independent company. VR does not yet enjoy financial autonomy in investments decision making and capital financing. One constraint, however, is the absence of a legal framework regulating business activities.
- (ii) **Create separate business units for passenger and freight.** Separation of passenger and freight operations into different business units has yet to take place at regional level so as to allow a clear understanding of the profitability of independent services. In addition, a greater role of the regional entities in the definition of the corporate plan is desirable to secure greater motivation in controlling costs and improving productivity.
- (iii) **Secure funds for infrastructure investments.** VR's infrastructure was severely damaged during the wars and has not yet been fully restored. The required financial resources have not been forthcoming from either domestic sources, or international financing institutions, making it increasingly difficult for VR to compete with competing modes.
- (iv) **Develop managerial capabilities.** VR's current management tools and systems are weak and fall short of requirements. In particular, market analysis capabilities need to be developed so that managers can have accurate intelligence to guide business decisions and help them define realistic corporate objectives and formulate an investment plan.

**(ix) Other Countries**

Table I.6 outlines the progress being made in restructuring railways in a number of other countries in the ESCAP region.

| <b>Table I.6. Other Selected Countries</b> |  |  |   |                                  |  |
|--|--|--|---|----------------------------------|--|
| <b>Country</b>                             | <b>Reasons for Reform</b>                                | <b>Market Structure</b>  | <b>Ownership of Infrastructure</b>                        | <b>Ownership of Railways</b>     | <b>Regulation</b>                      |
| <b>Japan</b>                               | To reduce high public subsidies and improve productivity | Monopoly (JNR)<br><i>6 passenger companies (regional monopolies), 1 freight firm</i> | State-owned<br><i>Owned by 6 new passenger companies.</i> | Public<br><i>3 private firms</i> | Regulated prices<br><i>Free prices</i> |

|                              |  |   |  |  |  |
|------------------------------|--|---|--|--|--|
| <b>Kazakhstan</b>            | Underinvestment;<br>Overcapacity and<br>over-staffing.<br>Lack of market<br>orientation  | Public<br>Monopoly<br><br><i>Public<br/>Monopoly</i>                            | State-owned<br>(KTJ)<br><br><i>Reformed<br/>Public<br/>Enterprise<br/>(NCKTJ)</i>          | State-owned<br>(KTJ)<br><br><i>Reformed<br/>Public<br/>Enterprise<br/>(NCKTJ)</i>                          | Prices and<br>service levels r<br><br><i>Prices and<br/>service levels<br/>regulated</i> |
| <b>Republic of<br/>Korea</b> | To improve the<br>competitiveness<br>of the railways; to<br>increase private<br>sector<br>participation; to<br>make the railways<br>financially self-<br>supporting; and,<br>to create fair<br>inter-modal<br>competition. | Public<br>Monopoly<br>(KNR)<br><br><i>Public Agency<br/>(KRFA)</i>              | State-owned<br>monopoly<br>(KNR)<br><br><i>Public-Private<br/>(KRC tentative<br/>name)</i> | State-owned<br>monopoly<br>(KNR)<br><br><i>Private firms<br/>with wide<br/>access for new<br/>entrants</i> | Prices and<br>service levels<br>regulated<br><br><i>Free Prices</i>                      |
| <b>New<br/>Zealand</b>       | To reduce high<br>public subsidies<br>and NZRL's<br>deficits   | Public<br>Monopoly<br>(NZRL)<br><br><i>Private<br/>Monopoly<br/>(Tranzrail)</i> | State-owned<br><br><i>Leased</i>   | Public<br>Enterprise<br><br><i>Private</i>   | Prices and<br>service levels<br>regulated<br><br><i>Free Prices</i>                      |
| <b>Uzbekistan</b>            | To reduce high<br>public subsidies<br>and operating<br>deficits; to<br>increase private<br>sector<br>participation; to<br>make the railways<br>financially self-<br>supporting.  | Public<br>Ownership<br><br><i>Public Agency</i>                                 | State-owned<br><br><i>Reformed<br/>Public<br/>Enterprise</i>                               | State-owned<br><br><i>Proposed<br/>privatization</i>   | Prices and<br>service levels<br>regulated<br><br><i>Free Prices</i>                      |

**Notes:** *The position following restructuring is shown in italics. In the case of Republic of Korea the reforms are proposed and therefore tentative at this stage.*

Most countries are reporting positive results from initial restructuring in terms of stabilising the market share for passengers and freight; increasing performance and productivity; and, reversing the drain on national resources. The extent to which private sector participation and competition has been introduced varies widely depending on the aims and objectives of restructuring and the nature of the problems to be addressed.

## **Railway Restructuring: The European Experience**

### **Introduction**

The railways of Europe are experiencing a fundamental overhaul the like of which has not been seen before. They are being transformed from monolithic state-run organizations into commercially-led enterprises. Why? What has prompted this change? Since 1970, the railways' share of the European market for both freight and passenger transport has declined considerably. Policymakers, however, recognizing the technological development achieved by railways as well as their operational efficiency over the years, decided that these traffic trends should not mask the intrinsic advantages possessed by the railways. Rail is an excellent substitute for road and air transport, in medium distance inter-city travel and helps to reduce congestion for the benefit of other traffic, such as short distance road transport and intra-European air traffic. To exploit these advantages and to ensure an important place for rail services in transport markets on a sustainable basis, the EU and non-EU states have promoted policies designed to render their railways more efficient and competitive by promoting commercial freedom.

This chapter identifies why European railways are undergoing this fundamental overhaul; what has prompted this change; and, what the future may hold. It examines, in detail, recent railway restructuring activities in Europe, and the main consequences of such policies with regard to:

- the changing institutional role of governments and railway organizations;
- the separation of railway infrastructure from railway operations, in terms of accounting for them and, in some countries, their management;
- the financial performance of the railways;
- the regulation of fares and competition policy; and
- their impact on traffic development, service quality, the role of the railway as public service provider.

### **Section I**

#### **An Overview of Rail Reform in Europe**

The general approach adopted in Europe to improving the efficiency and competitiveness of railway undertakings has centred on fostering commercial freedom and competition.

This has been pursued on the basis of three complementary policies, providing for:

- (i) a clearer definition and separation of the roles of railway undertakings vis à vis the state;
- (ii) an improvement in the financing of railways through greater transparency; and
- (iii) a progressive opening, through provision of non-discriminatory rights of access, to rail infrastructure for specified categories of service.

These developments have been facilitated notably through a separation of accounts for infrastructure and operations and the isolation of non-commercial debts.

For the purposes of this selective review of railway reform and restructuring in Europe, selected countries of Europe have been divided into the following groupings:

- (i) **The European Union (EU)** as of 2003 which comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, The Netherlands, Portugal, Spain, Sweden, and the United Kingdom;
- (ii) **New EU Member States joining in 2004** comprising Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia;
- (iii) **EU Applicants** comprising Romania, Bulgaria (who are expected to join the EU in 2007) and Turkey;
- (iv) **European Free Trade Area (EFTA)** countries comprising Iceland, Liechtenstein, Norway, Switzerland; and
- (v) **CIS Countries** comprising the Russian Federation, Ukraine and Belarus.

## **Section II**

### **The European Union**

Since 1970, the annual economic growth in the EU has averaged 2.6 per cent in real terms. In general, transport demand for both passengers and freight has run in parallel with the growth in GDP, with the result that the growth rate in transport services averaged 2.3 per cent for freight and 3.1 per cent for passengers over the same period. It is expected that the current liberalization of the transport market and the enhancement of EU membership will further increase the rate of growth in GDP and transport demand.

The railways of the EU have not shared the same fate as other modes. Specifically, since 1970, the railways' share of the EU market for both freight and passenger transport has declined considerably.

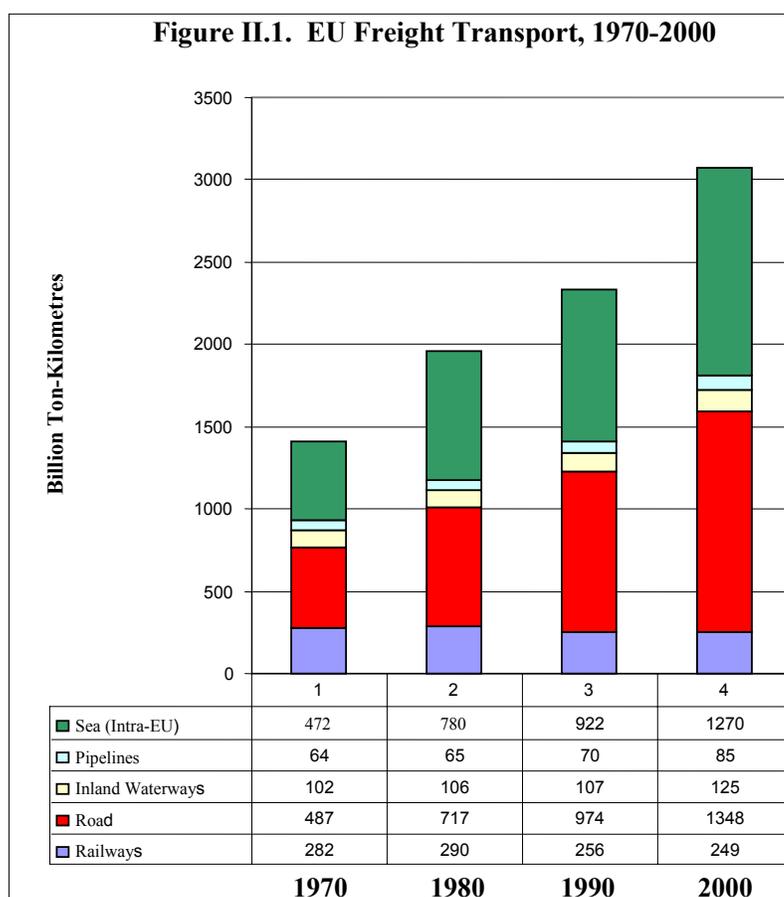
In the freight market the decline in market share of the railways has been combined with an absolute decline in transport volumes. Table II.1 shows that the railways' share of the EU freight transport market fell from 20 per cent in 1970 to only 8.1 per cent in 2000. During the same period the market share for road transport increased from 34.6 to 43.9 per cent and for intra-EU sea transport from 33.5 to 41.3 per cent.

Table II.1. EU Freight Transport, 1970-2000

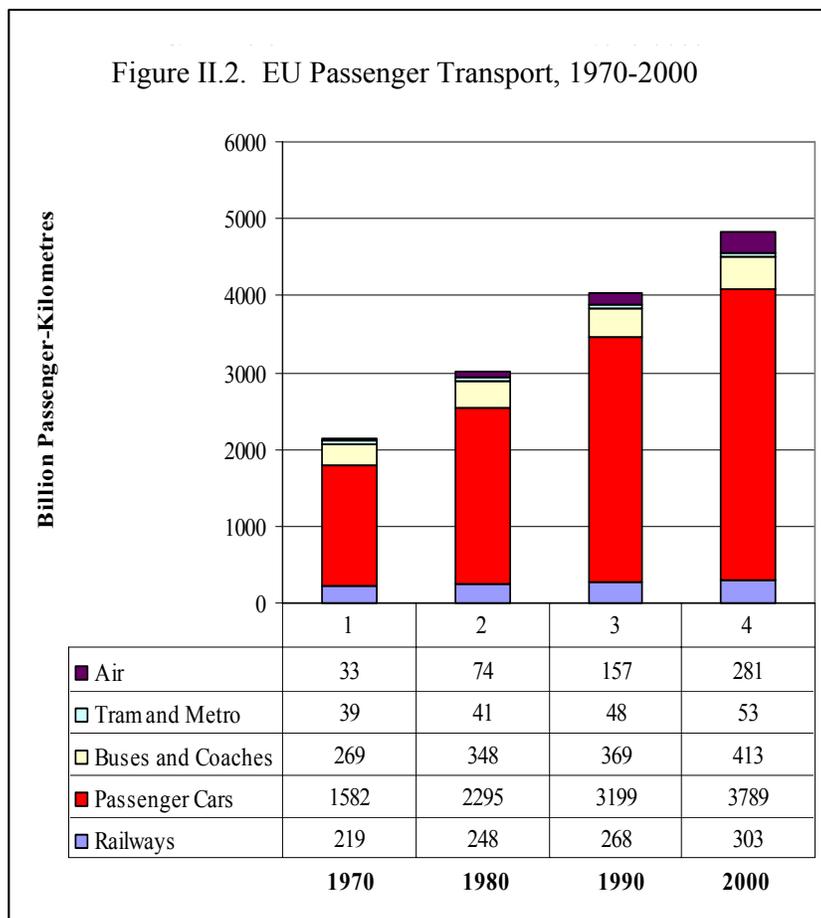
| Year | Railways<br>(percentage) | Road<br>(percentage) | Inland<br>Waterways<br>(percentage) | Pipelines<br>(percentage) | Sea<br>(Intra-EU)<br>(percentage) | Total Ton-<br>Kilometres<br>(billions) |
|------|--------------------------|----------------------|-------------------------------------|---------------------------|-----------------------------------|--|
| 1970 | 20.1                     | 34.6                 | 7.3                                 | 4.5                       | 33.5                              | 1407                                   |
| 1980 | 14.7                     | 36.2                 | 5.4                                 | 4.3                       | 39.4                              | 1978                                   |
| 1990 | 11.0                     | 41.8                 | 4.6                                 | 3.0                       | 39.6                              | 2329                                   |
| 2000 | 8.1                      | 43.8                 | 4.1                                 | 2.8                       | 41.3                              | 3070                                   |

Source: EU [www.europa.eu.int](http://www.europa.eu.int)

Figure II.1 shows that, with regard to the freight market, the performance of the railways of the EU has fallen from 282 to 249 billion ton-kilometres per annum between 1970 and 2000. This absolute decline has occurred during a period in which the volume of freight traffic has risen by 218 per cent with road and intra-EU sea transport accommodating much of the increase. Freight transported by road increased from 487 to 1348 billion ton-kilometres whilst sea freight rose from 472 to 1270 billion ton-kilometres over the period.



In the EU passenger transport market the railways have, over the period 1970 to 2000, lost market share to other modes but increased total passenger-kilometres by 38 per cent. Figure 2.2 shows that between 1970 and 2000 passenger-kilometres carried by the EU railways increased from 219 to 303 billion per year. However, in the same period, the overall market grew by 126 per cent from 2,142 to 4,839 billion passenger-kilometres per year. Passenger transport by private car, measured in passenger-kilometres, grew by 240 per cent over the period 1970-2000 and accounted for 78 per cent of the total passenger-kilometres by all modes, by 2000 (see table II.2). These figures hide the growth of high-speed rail travel. This form of travel grew more than six-fold, in terms of passenger-kilometres, over the period between 1980 and 2000.



| <b>Table II.2. EU Passenger Transport Modal Split, 1970-2000</b> |                     |                       |                          |                       |                     |  |
|--|---------------------|-----------------------|--------------------------|-----------------------|---------------------|--|
| <b>Year</b>  | <b>Railways</b>     | <b>Passenger Cars</b> | <b>Buses and Coaches</b> | <b>Tram and Metro</b> | <b>Air</b>          | <b>Total Passenger-Kilometres (billions)</b> |
|  | <b>(percentage)</b> | <b>(percentage)</b>   | <b>(percentage)</b>      | <b>(percentage)</b>   | <b>(percentage)</b> |  |
| <b>1970</b>  | 10.2                | 73.8                  | 12.6                     | 1.8                   | 1.5                 | <b>2,142</b>                                 |
| <b>1980</b>  | 8.2                 | 76.4                  | 11.6                     | 1.4                   | 2.5                 | <b>3,006</b>                                 |
| <b>1990</b>  | 6.6                 | 79.2                  | 9.1                      | 1.2                   | 3.9                 | <b>4,041</b>                                 |
| <b>2000</b>  | 6.3                 | 78.3                  | 8.5                      | 1.1                   | 5.8                 | <b>4,839</b>                                 |
| <b>Source: EU www.europa.eu.int</b>                              |                     |                       |                          |                       |                     |  |

This significant increase in overall traffic has been accompanied by a parallel decrease in mobility and has also led to the deterioration of the environment through pollution, congestion, noise and land-take for transport infrastructure. Such trends became evident in the 1980's and in consequence, the European Commission's White Paper<sup>41</sup> on *The Future of the Common Transport Policy (1992)* was explicitly committed to the development of sustainable mobility and the promotion of more environmentally-friendly modes of transport<sup>42</sup>.

Over recent years, political attention in Europe has been focused on the more negative interpretation of the above analysis—specifically it has focused on the fact that whilst the overall transport market has grown strongly the railways have performed less well, and lost modal share with adverse financial consequences. Many factors lie behind this trend, some of which are outside the direct control of the railways such as government policies that have favoured the development of road transport. Other factors however originate within the rail sector. ECMT<sup>43</sup> suggested that the railways of the EU increasingly faced a mismatch between the organization of their train services and the rapidly changing patterns of transport demand. In particular, freight services no longer corresponded to the demand for transport at short-notice in small loads arising from 'Just-in-Time' industrial production methods. Many see the situation for freight as particularly problematic and want to see the railways increase their market share in order to reduce congestion and the nuisance impact of the rapidly growing number of trucks on the roads of Europe. Such proposals tend to reflect real concerns that rail is losing market share because its quality of service is in some cases poor and its labour productivity relatively low compared with other modes.

Whilst many countries have pursued their own rail reform agendas driven by national priorities, the European Union has played a leading role in promoting railway reform. The EU has targeted international rail freight for priority in reform, with the prime reason put forward for poor service and low productivity being the lack of competition in train operations and the monopoly powers enjoyed by national railways.

The approach adopted in Europe, by the ECMT and EU, to improving the efficiency and competitiveness of railway undertakings has centred on promoting commercial freedom. A series of EU Directives have been issued since 1991, based on the premise that the railways are a vital part of the transport system and crucial to achieving greater integration of the EU's transport sector as an essential element in the creation of the internal market. Their provisions are intended to improve the efficiency of the railway system by promoting a competitive market, whilst taking account of the special features of the railways. The specific policies have included:

- providing a clear definition and separation of the roles of railway undertakings vis-à-vis the state;

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<sup>41</sup> A White Paper is a document which sets out policy intentions and, usually a proposed programme of legislation.

<sup>42</sup> Erik Vandebroele. 'Railway Transport Policy in Europe' Japan Railway and Transport Review. June 1994.

<sup>43</sup> ECMT 'Railway Restructuring in Europe' 1998, OECD, Paris.

- improvements in the financing of railways through greater transparency; and
- the progressive opening of railway infrastructure for specified services, through the provision of non-discriminatory rights of access.

These developments have been facilitated through the separation of accounts for railway infrastructure and train services, and the isolation of non-commercial debts. Common rules have been applied to debt restructuring in the EU.

The first piece of major legislation goes back to 1991 and the adoption of directive [91/440/EEC](#), *The Development of the Community's Railways*, by the Council of Ministers. This introduced a degree of liberalization into certain areas of rail transport, above all prompting the railways to concentrate more on competitiveness. Directive 91/440, requires each national railway undertaking within the European Union to be established as an independent body, run on commercial management principles. It also enforces the financial restructuring of railway undertakings, to provide separate accounts for infrastructure management and rail operations.

The directive requires Member States of the EU:

- to manage railway undertakings in such a way that these understand the need for competitiveness and sound financial management. Member States must thus, jointly with existing public railway operators, take steps to reduce the indebtedness of railway undertakings;
- to make railway undertakings independent by giving them a budget and system of accounts which are separate from those of the State;
- on specific terms, to guarantee rights of access for rail transport operators in other Member States to international combined transport services. The aim here is to open up the Community markets in these sectors. It has also created the possibility to open the market for international freight and passenger services under certain conditions; and
- to have separate accounting for railway infrastructure (track and related equipment) and the operation of transport services as such. The aim here is greater transparency in the use of public funds, but also the ability to measure the actual performance of these two activities better. It is with this requirement in mind that a number of Member States have in recent years set up bodies which manage the railway infrastructure but are separate from the railway companies, which continue to manage the carriage of passengers and freight.

Linked to this directive is Regulation 91/1893/EEC concerning the obligation inherent in the concept of public service in transport. This directive requires that any public service obligations should normally be provided for in specific contracts.

Directive 91/440 offers national railways open access rights to the main-line infrastructure of other EU Member States, but only for co-operative ventures involving train operators in the Member States at either end of a route or for combined transport freight operations. This Directive has not proved effective in encouraging new

international rail services; rather, it has defined the minimum requirements for the financial and organizational restructuring of national railway companies.

Directive 95/18 requires national railway undertakings to hold a current operating licence. It defines the criteria governing the award, retention, and international validity of such licences, with the goal of ensuring consistent and nondiscriminatory conditions for market entry - particularly for companies seeking to exercise international open access rights.

Directive 95/19 defines the basic principles and procedures governing the allocation of main-line infrastructure capacity between alternative users, including open access operators, in order to facilitate the development of new services. It also specifies criteria for setting rail infrastructure charges, in the continuing absence of a coherent, multi-modal framework of user charges.

Directives 95/18/EC and 95/19/EC strengthened the requirement for member states to permit competition amongst train service operators by promoting the allocation of railway capacity and the development of non-discriminatory fees for access to the infrastructure. The problem has been that their provisions are limited to international operations qualifying for the very limited access rights set out in Directive 91/440.

The main provisions and requirements of the above regulations and directives are set out in table II.3.

### **Table II.3. Key requirements of EU Directives and Regulations, 1991-1995**

**Regulation 91/1893/EEC concerning the obligations inherent in the concept of public service in transport** required separate accounting for rail services provided under public service obligations and encouraged the use of contracts between governments and rail companies for these services.

**Specifically EU member states must ensure that:**

Public Service Obligations (PSO) are provided for in contracts. Urban, sub-urban and regional services may be excluded from this requirement but their accounts must be separated from non-PSO activities.

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**Directive 91/440/EEC on the development of the Community's railways** provides rights of access for international freight traffic; international groupings of railway companies; and, to any road/rail combined transport operator to transit national rail infrastructure. It required the separation of financial accounts between train operations and infrastructure management and outlawed cross-subsidies between them. At the same time the Directive stressed the need for commercial management freedom for railway companies and required member states to reduce the level of debt from accumulated deficits of rail companies.

**Specifically EU member states must:**

Afford railway operators independence to behave commercially.  
 Ensure that infrastructure and operations have separate accounts with the option of separating the management of the railway infrastructure from that of railway operations.

- Prevent aid given to infrastructure passing to operations and *vice versa*.
- Establish rules for payment for infrastructure use based on non-discrimination.
- Grant rights of access for international groupings to run international freight and passenger services.
- Grant track access to international combined transport operations.
- Ensure PSOs and related contracts are made according to commercial principles.
- Ensure sound financing structures for public railway undertakings.
- Reduce indebtedness to levels that do not impede sound financial management.
- Provide State Aid to reduce debts only in accordance with Articles 77, 92 and 93 of the EEC Treaty.

The Commission set up an advisory commission on the application of the Directive.

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**Directive 95/18/EC on the licensing of Railway Undertakings** EC set out some supporting rules on the award of operating licences and safety certificates.

**Specifically:**

- Operators required to obtain:
  1. An operating licence (conditions cover financing capacity, professional qualifications, insurance).
  2. A safety certificate.
  3. Path allocations.
- Member States required to designate licensing authorities.

**Directive 95/19/EC on allocation of railway infrastructure capacity and the charging of infrastructure fees** required governments to lay down rules for establishing fees for the use of transit infrastructure, publish procedures for the allocation of capacity and appoint an independent body for appeals against allocation decisions.

**Governments must, in general:**

- Ensure non-discriminatory access for international consortia and combined transport operators as defined in 91/440/EEC.
- Ensure the optimum use of infrastructure.
- Ensure no discrimination in charging for the use of infrastructure.
- Define an infrastructure manager.
- Ensure infrastructure managers accounts balance income (including PSO payments) and expenditures.
- Lay down rules for determining infrastructure fees based on type of service, time-tabling and infrastructure wear.
- Publish procedures for allocation of capacity.
- Define an allocation body.
- Explain reasons for refusals to allocate capacity.
- Appoint an independent body for appeals.

In 1996 the European Commission published a White Paper entitled ‘A Strategy for Revitalising the Community’s Railways’. The White Paper advocated a greater role for market forces, which would encourage operators to cut their costs, improve the quality of service and offer new products. The White Paper also advocated a clear separation of responsibilities between the State and the railways, which had to have a financial structure which would allow them to be independently and soundly managed. It suggested the creation of ‘rail freight freeways’, major routes on which the carriage of freight would be market-driven and paths would be shared fairly amongst operators, in accordance with Directive 95/19/EC. The general principles underlying these freeways were the open

access of the national networks for international services and to improve the co-operation between national infrastructure managers<sup>44</sup>. The freeways have not been very successful because little use has been made of this open access. The White Paper was however, the starting point for three Directives (2001/12-14/EC) known collectively as the First ‘Infrastructure Package’. Directive 2001/12/EC sets out the general framework for European Railways; Directive 2001/13 covers the licensing of railway undertakings<sup>45</sup>; and, Directive 2001/14/EC covers capacity allocation, charging and safety certification. Table II.4 sets out the main provisions of the First Infrastructure Package.

**Table II.4 Key EU Policies and Directives, 1996 -2001**  
**The First Infrastructure Package**

**1996 White Paper ‘A Strategy for Revitalising the Community’s Railways’** advocated a greater role for market forces, which would encourage operators to cut their costs, improve the quality of service and offer new products. Its key proposals were enacted through Directives 2001/12-14/EC known collectively as the First ‘Infrastructure Package’.

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**Directive 2001/12/EC** modifies 91/440/EEC to provide access rights for the transit of international freight traffic on most of the network from 2003 and all of the network from 2008 for any operator.

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**Directive 2001/13/EC** amends 95/18/EC, providing for operating licences to be valid across the EU.

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**Directive 2001/14/EC** replaced 95/19/EC and sets out the framework for charges for the use of rail infrastructure by freight trains, with short run marginal costs as the starting point and mark-ups allowed for a number of purposes including partially reflecting the long run costs of infrastructure.

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**Directive 2001/16/EC** sets out new procedures for making technical standards to promote interoperability of national rail networks, making governments rather than the rail industry responsible for standards.

Policymakers have increasingly recognized a number of intrinsic advantages of the railways, including:

- (i) relatively low environmental costs, such air pollution, compared with other modes particularly road transport;
- (ii) efficiency in the consumption of energy;
- (iii) a high safety record;

<sup>44</sup> ‘infrastructure manager’ means a public body or undertaking responsible for establishing and maintaining railway infrastructure, as well as operating the control and safety systems.

<sup>45</sup> ‘railway undertaking’ means any private or public undertaking whose main business is to provide rail transport services for goods and/or passengers.

- (iv) a good level of operational efficiency all year round irrespective of climatic condition;
- (v) comparative cost advantages for freight transport remain where travel distances exceed 150-200 kilometres and this in spite of the restructuring of heavy industries such as coal and steel;
- (vi) high speed services have enabled the railways to recoup a significant market share, especially for medium distance intercity travel; and
- (vii) cost effectiveness for mass rapid transit particularly for commuting to work and places of education.

In terms of European passenger transport, railways often provide essential advantages for those who do not have access to a car or live in remote areas. In the European freight sector, despite the existence of competitive imbalances between modes, rail is experiencing steady growth in combined and container transport. Rail is also an excellent substitute for road and air transport, in medium distance inter-city travel and helps to reduce congestion for the benefit of other traffic, such as short distance road transport and intra-European air traffic. To exploit these advantages and to ensure an important place for rail services in transport markets on a sustainable basis, the EU has promoted policies designed to render the railways more efficient and competitive. In this regard, in 2001, the EC published its White Paper on 'European Transport Policy for 2010: time to decide', in which for the first time the Commission placed the needs of users at the heart of its transport strategy by proposing 60 measures to refocus Europe's transport policy on the needs of its citizens. The first of these measures is designed to shift the balance between modes of transport by 2010 by revitalizing the railways, promoting maritime and inland waterways transport and linking up the different modes of transport. For railways, the goal is to achieve by 2010 the same modal share as in 1998, thus reversing the decline of the last thirty years. Rail transport is therefore expected to grow significantly as the total transport demand in 2010 is expected to be 40 per cent higher than in 1998.

The White Paper also paved the way for new Directives to improve access to the rail networks of Europe known as the 'Second Infrastructure Package'. The new Directives extend the access rights provided by 2001/12/EC to include cabotage, i.e. loading and unloading international trains and adding and removing wagons within transit countries and to cover domestic freight markets. It will also set up a new agency and new procedures for harmonising safety procedures and equipment specification, complementing 2001/16/EC in this respect. Earlier plans to require completely separate ownership of infrastructure management from train operations, and completely separate management of operations from key infrastructure allocation functions have been dropped for the time being in face of opposition from some national governments, and doubts from independent experts and think-thanks. The EC has also set out plans to extend access rights to passenger services in future stages of reform.

### Figure II.3. A Summary of EU Railway Policy

*In essence, the EU perceives that the future development and efficient operation of the railway system will be made easier if a **distinction is made between the provision of transport services and the operation of infrastructure**. The EU recommends that these two activities are separately managed and requires that they have **separate accounts**, in order to have enhanced financial transparency and boost competition in railway service management in terms of improved comfort and greater quality of services. However, the EU recommends that **Member States retain general responsibility for the development of the appropriate infrastructure**.*

*The EU requires that Member States must guarantee that railway undertakings are afforded a status of independent operators behaving in a commercial manner and adapting to market needs. Railway undertakings are expected to be able to adjust their activities to the market and to manage those activities under the responsibility of their management bodies, in a way that ensures efficient and appropriate services at the lowest possible cost for the quality of service required. Railway undertakings must be managed according to the principles which apply to commercial companies; this shall also apply to their **public services obligations imposed by the State and to public services contracts** which they conclude with the competent authorities of the Member State. EU Directives also require that railway undertakings shall determine their business plans, including their investment and financing programmes subject to achieving the undertakings' financial equilibrium. The business plans should be developed in the context of the general policy guidelines determined by the State and take into account national plans and contracts (which may be multi-annual) including investment and financing plans. In the absence of common rules on the allocation of infrastructure costs, Member States must, after consulting the infrastructure manager, **lay down rules providing for the payment by railway undertakings for the use of railway infrastructure**; where such payments must comply with the principle of non-discrimination between railway undertakings.*

*In conjunction with the existing publicly owned or controlled railway undertakings, Member States have been required to set up appropriate mechanisms to help **reduce the indebtedness** of such undertakings to a level which does not impede sound financial management and or their ability to improve their financial situation. Further, to that end, Member States may take the necessary measures requiring a separate debt amortization unit to be set up within the accounting departments of such undertakings. The balance sheet of the unit may be charged, until they are extinguished, with all the loans raised by the undertaking both to finance investment and to cover excess operating expenditure resulting from the business of rail transport or from railway infrastructure management. Debts arising from subsidiaries' operations may not be taken into account.*

The above policies have led EU Member States to institute a programme of organizational and financial restructuring of national railway undertakings. The degree and speed of change has varied widely: the railway undertakings of the Sweden and United Kingdom have, to date, been subject to the most radical restructuring - including changes of ownership; those of France, Belgium, Spain, Italy, Ireland and Greece have, so far, changed the least. But, as a minimum, railway infrastructure management units have now been established in most Member States - either as a separate corporate bodies, or as business units within a "holding company" structure. And in parallel, user charges for rail infrastructure have been calculated (albeit with significant international differences as regards methodology adopted, and the resultant level or structure of charges). Typically,

the passenger and freight divisions of national railways have also been restructured into business units, with much greater financial accountability and stronger managerial control over rolling stock and human resources. European rail productivity, financial performance and service quality has improved as a result but principally on domestic rather than international rail networks. Whilst the Directives have had some impact in stimulating restructuring of railways, the very limited access rights which it provides have had minimal impact in stimulating competition in the provision of rail services or the development of open access or international rail services.

It is possible to describe the extent railway restructuring in individual Member States of the EU, according to how they have implemented policies embodied within the various Directives, in particular the extent of:

- (i) Legal independence;
- (ii) The separation of infrastructure management from railway operations;
- (iii) The financing of public service obligations;
- (iv) Market access for new operators; and
- (v) Improvement in the finances of railway undertakings.

Tables II.5 to II.19 describe the current position, in terms of these variables, in each of the Member States of the EU.

It is apparent from the tables that, in a majority of EU countries, national railways are organized as 100 per cent state-owned joint stock companies. However privately-owned joint stock companies have been introduced in the United Kingdom - except Northern Ireland. In countries where railway infrastructure and operations have been separated organizationally only the United Kingdom has privatized both parts. Most governments have opted to retain infrastructure in public ownership with the creation of a state agency (non-ministerial state department) to manage it as in Denmark, Finland, France, Netherlands, Portugal and Sweden. Among the joint stock companies private capital is incorporated only in Belgium, less than 1 per cent of shares, and the United Kingdom. In Great Britain all passenger operations have been franchised (contracted for limited periods of time) to private companies and infrastructure, freight operations and ancillary businesses have all been sold to the private sector. In Germany, shares in rail companies, were sold after DB AG transformed into 5 companies under DB Holding AG in 1999. Only a minority share holding (up to 49.9 per cent) may be sold in the infrastructure company DB Netz AG (currently DB Fahrweg division). Uneconomic investment decisions have, historically, been imposed by governments on railways, and in most EU countries have been the main cause of accumulated debt. Insulating railway operators from such debts has been a central aim of the railway reforms supported by Directive 91/440/EEC. In some countries, such as the United Kingdom, this has been addressed by isolating non-commercial investments and non-commercial aspects of overall investment planning, making these the subject of specific grants from public funds. This has also been part of the strategy in many other countries where, for example, regional or local authorities will be expected to participate in investments in regional networks.

| <b>Table II.5. Austria</b>   |  |
|--|--|
| <b>Legal independence</b>  | In 1993, ÖBB was restructured as a public limited company and responsibility for all operational management functions were transferred to a board of directors under the Federal Railways Act <i>Bundesbahngesetz</i> ", 1992. The State acts as proprietor represented by the Minister of Transport. The Act provides for multi-year guidelines issued by Ministers of Transport and Finance for budgetary transfers to the railways.   |
| <b>The separation of infrastructure management from railway operations</b> | <p>The Government has established separate companies for the construction and upgrading of important lines, HLAG and BEG (Hochleistungsstungen, Brenner), as well as for financing of rail infrastructure (SCHIG). There are also a small number of private companies operating integrated narrow gauge railways.</p> <p>Accounts for business relating to the provision of transport services and those for business relating to the management of the railway infrastructure are kept separately (in line with article 6, paragraph 1, of Council Directive 91/440/EEC).</p>   |
| <b>The financing of public service obligations (PSOs)</b>                  | PSOs cover a proportion of inter-urban and regional rail services, tariff regulation only applies to services covered by PSOs. Contracts related to PSOs have been concluded under this framework in line with 1191/69/EEC and 1893/91/EEC. Government only regulates tariffs under PSO contracts and for "Verkehrsverbände" regional passenger services.  |
| <b>Market access for new operators</b>                                     | <p>Access rights for new operators have been regulated recently according to EU Directives. Access rights are granted in the context of the EU freight corridors initiative (Freeways).</p> <p>Fees are set by the infrastructure manager according to Directive 95/19/EC following the principles of articles 7 and 8.</p>  |
| <b>Improvement in the finances of railway undertakings</b>                 | <p>In accordance with Directive 91/440/EEC, the state has taken financial responsibility for the infrastructure of ÖBB. The undertaking established for this purpose also has the right and obligation to sell all real estate which no longer requires operational management functions.</p> <p>A new corporation was set up through a special act for financing rail infrastructure ("<i>Schieneinfrastrukturfinanzierungsgesetz</i>") and was given a certain amount of money to be distributed to all Austrian railway undertakings to finance their infrastructure. In the future, this financing corporation should be self-financing from infrastructure fees, from the capital markets and from EU funds allocated to Austria.</p> |
| <b>Other</b>   | Austria has already implemented Council Directive 91/440/CEE as well as Directives 95/18/CE and 95/19/CE.  |

| <b>Table II.6. Belgium</b>   |   |
|--|---|
| <b>Legal independence</b>  | In 1991 the Government established SNCB's managerial and legal independence from the State. However, its independence is qualified in that the state imposes a number of public service obligations on SNCB, principally: the provision of domestic passenger transport by conventional train services; the acquisition, construction, maintenance, management and operation of rail infrastructure.  |
| <b>The separation of infrastructure management from railway operations</b> | There is no separation between infrastructure management and train operations, at an institutional level. The SNCB is subject to the same legislation as private sector companies in respect of its accounting requirements. However, it is required to set up a separate accounting system for its public service activities and its other activities. Separate accounts are also kept for operations and infrastructure management.   |
| <b>The financing of public service obligations</b>                         | The regulations and conditions under which SNCB is to carry out its public service obligation are stipulated in a management contract between the Government and the independent public undertaking. 1 per cent of SNCB shares are traded on the stock exchange. Standard 2nd class tariff increases must not exceed inflation plus 2 per cent. SNCB must inform government of all tariff changes. SNCB is free to set fares and fare structures for its public services and to determine the scale, type and level of prices for passenger transport by conventional trains. However, the management contract caps annual fare increases, linking them to certain distance criteria and to the retail price. |
| <b>Market access for new operators</b>                                     | The provisions of Directive 91/440/EEC were transposed into Belgian law in 1997 allowing applications by new operators. The procedure for transposing Directives 95/18/EC and 95/19/EC has been effected. Non-discriminatory usage fees are set by the infrastructure manager, in this case the SNCB, taking due account of such considerations as operating costs, the situation in the transport market and fair competition.   |
| <b>Improvement in the finances of railway undertakings</b>                 | In 1996 the Government approved the SNCB restructuring plan, which is aimed at balancing the finances of the SNCB by 2005. At the same time, a substantial increase in subsidies for investment in the railways and the index-linking of the allocation for the public service obligation has improved SNCB's finances. The Government has also set up a finance company, TGV Financière, to cover all construction and equipment costs for the border to border high-speed network; this public limited company was established in 1997.   |
| <b>Other</b>   | SNCB has introduced a series of measures to reduce production costs and increase productivity by restructuring its operating services; adopting a better-targeted personnel policy; radically restructuring its internal organization; splitting up its rail activities between independent business units and setting up an independent procurement unit.  |

| <b>Table II.7. Denmark</b>   |  |
|--|--|
| <b>Legal independence</b>  | <p>In 1994 the Danish State Railways, DSB, were separated from the Ministry of Transport as an Agency and subsequently as an independent joint stock company is planned.</p> <p>DSB has been divided part into an independent joint stock and part into a Limited Company responsible for the City Railway system in Copenhagen.</p>   |
| <b>The separation of infrastructure management from railway operations</b> | <p>BS (Banestyrelsen) was established in 1997 as the rail infrastructure Agency under the Ministry of Transport. The Agency is organizationally separated from the Ministry and DSB. One private freight company and 13 small integrated (partly privately owned) railways operate in Denmark along with DSB.</p>  |
| <b>The financing of public service obligations</b>                         | <p>PSOs are managed according to specific contracts which are open to competitive tendering.</p>   |
| <b>Market access for new operators</b>                                     | <p>Laws and Regulations have been adopted to transpose Directive 91/440/EEC into Danish law. Directive 95/18/EC was put into force in 1997 permitting the licensing of private train companies.</p> <p>A system of fees for use of infrastructure is gradually being introduced, putting into force Directive 95/19/EC.</p> <p>Since 1999, rail freight transport has been liberalized and railway passenger traffic (Public Service Obligation Traffic) has been progressively subject to tendering.</p> <p>Since 2000, licensed operators may start new passenger services where there are available time slots.</p> |
| <b>Improvement in the finances of railway undertakings</b>                 | <p>As a result of previous restructuring of the public funding of DSB (including infrastructure now in Banestyrelsen) the Danish railway system has no debt.</p>   |
| <b>Other</b>   |  |

| <b>Table II.8. Finland</b>   |   |
|--|---|
| <b>Legal independence</b>  | Directive 91/440/EEC has been fully transposed into Finnish legislation.  |
| <b>The separation of infrastructure management from railway operations</b> | <p>Infrastructure management is separated from train operations.</p> <p>RHK, the Finnish Rail Administration, a Government Agency subordinated to the Ministry of Transport and Communications, was founded in 1995. The RHK is responsible for the maintenance and development of the state-owned network. It is also responsible for the safety of rail transport.</p> <p>Train services are provided by Finnish State Railways (VR). The legal independence of VR was established by separating the operational activities into a group of joint stock companies formed according to the rules of Finnish company law.</p> <p>The parent company is called "VR-Group Ltd" (Finnish Railways). The state holds 100 per cent of its shares. Being a company enables it to operate on equal commercial terms with other modes in the transport field. The state exercises its control over the company through shareholders rights and membership on the board of directors. The VR Group companies started their activities in 1995.</p> <p>VR-Group Ltd. has two main subsidiaries: VR Ltd. for freight and passenger services; VR Track Ltd. for maintenance and construction services for the railway network. VR-Track Ltd. and the Finnish Rail Administration have concluded a framework agreement on track building and maintenance services. VR-Data, the VR Group computer services business unit, was turned into a joint stock company in 1996.</p> |
| <b>The financing of public service obligations</b>                         | VR sets tariffs free from government control. VR bears no PSO responsibilities. The State and municipal governments bear responsibility for public service interests and contract services from transport companies on the basis of competitive tendering.  |
| <b>Market access for new operators</b>                                     | New entrants are allowed to operate on the Finnish rail network according to the rules laid down in Directive 91/440/EEC. The Finnish track fee consists of two parts: 1) A variable fee based on: the social marginal costs of train and road traffic; train gross ton-kilometres; passenger/freight traffic. 2) A fixed fee for freight traffic.  |
| <b>Improvement in the finances of railway undertakings</b>                 | The VR-Group Ltd is a profit making company which pays dividends to the shareholder (the state). Staffing has been reduced from 29 000 in the 1980s to 14 800 now.  |
| <b>Other</b>   |   |

| <b>Table II.9. France</b>  |  |
|--|--|
| <b>Legal independence</b>  | <p>RFF (Réseau Ferré de France) and SNCF are constituted as state enterprises with commercial statutes. They have legal responsibility and financial autonomy subject to governance by the state.</p> <p>Tariffs are set by SNCF. For passenger services they require Ministerial approval. For freight the Minister of Transport is simply informed of tariffs.</p>   |
| <b>The separation of infrastructure management from railway operations</b> | <p>RFF, established in 1997, is the owner of the national rail infrastructure and is responsible for the development of the network. SNCF maintains the infrastructure on behalf of RFF as well as managing rail traffic and operations. Separation of accounts has existed since the establishment of SNCF. The creation of RFF resulted in organizational separation.</p>  |
| <b>The financing of public service obligations</b>                         | <p>Public service obligations are imposed by rules dating from 1983 in the process of modification to take account of RFF.</p>   |
| <b>Market access for new operators</b>                                     | <p>The legal basis for access is established by decrees, in 1995, transposing Directives 91/440/EEC, 95/18/EC and 95/19/EC.</p> <p>The law establishing RFF provided for rules to determine infrastructure fees in 1997. It provides for the track to be categorized by usage (urban, intercity, high speed etc.) for the purposes of charging. For each category fees are composed of: a fixed element corresponding to a right of access to the network, for a given period; a capacity reservation element; and a use charge.</p> |
| <b>Improvement in the finances of railway undertakings</b>                 | <p>Rail reform in France aims, notably, at relieving SNCF of a large part of its debt. 135 billion Francs of debt was transferred to RFF on its creation, corresponding to loans related to infrastructure. SNCF aims to reduce its debt as part of its plans to attract customers. RFF revenues flow from infrastructure fees and a contribution from the state budget to infrastructure costs.</p>   |
| <b>Other</b>   | <p>Rail reform in France also involves the decentralization of regional passenger services. This passed full responsibility for the organization of SNCF's passenger rail services to 6 regions. The Government finances these regions with the operating subsidies formerly paid to SNCF.</p>   |

| <b>Table II.10. Germany</b>  |   |
|--|---|
| <b>Legal independence</b>  | <p>Article 87e of the “Grundgesetz” (Constitution) and the Railway Restructuring Act of 1993 provide the legal basis for German Railways. The management of the railways owned by the Federal Republic is governed by the principles of private law. The merger of “Deutsche Bundesbahn” (DB) and “Deutsche Reichsbahn” (DR) created “Bundeseisenbahnvermögen” (BEV - Special Asset Federal Railways), commercial activities were separated out in January 1994 under the name of “Deutsche Bahn Aktiengesellschaft”, DB AG (German Rail Joint-Stock Corporation).</p> <p>Article 87e of the Railway Restructuring Act provides for the Federal Republic to remain the majority shareholder (no less than 50.1 per cent) in DB Netz AG (the infrastructure joint-stock company) -established in 1999 - and remain responsible for preserving and developing the rail track network infrastructure and offer services on this network in the public interest.</p> <p>Obligatory tariff regulations for freight have been substantially reduced. It is no longer required that freight tariffs be submitted for approval. For passenger transport, it is still obligatory to establish tariff regulations and submit them for approval. Approval is also required for both fares and the conditions of carriage for short-distance passenger rail transport, whereas for long-distance passenger rail transport, only the conditions of carriage need to be approved.</p> |
| <b>The separation of infrastructure management from railway operations</b> | <p>The Act to Establish the German Rail Joint-stock Corporation) of 1993 created DB AG by separating commercial activities from the Bundeseisenbahnvermögen (BEV - Special Asset Federal Railways).</p> <p>In 1997 the supervisory board of DB AG transformed the railways into the following 5 companies:</p> <ul style="list-style-type: none"> <li>- DB Reise und Touristik AG (long distance passenger transport);</li> <li>- DB Regio AG (short distance passenger transport);</li> <li>- DB Cargo AG (freight transport);</li> <li>- DB Netz AG (infrastructure);</li> <li>- DB Station and Service AG (passenger stations).</li> </ul> <p>The companies are grouped under a holding company, DB AG and are separate entities for accounting and management purposes.</p>   |
| <b>The financing of public service obligations</b>                         | <p>The state that is responsible both for preserving railway infrastructure and PSOs, not DB AG which is not subject to any commitment towards public services.</p> <p>Further, under the policy of Regionalization, from 1996, the running and funding of DB AG’s short-distance passenger rail services were put on a regional (<i>Länder</i>) level in order to make such services more cost-effective and appropriate to the needs of customers.</p>  |

|   |   |
|---|---|
| <p><b>Market access for new operators</b></p>                     | <p>General Rail Act (AEG) opened the networks of all German railways providing public transport to all railway undertakings both registered in the Federal Republic of Germany and non-German undertakings.</p> <p>Disputes over the use of tracks can be settled through the Federal Railway Office or the antitrust authorities, as appropriate. In addition to the long-established non-Federal Republic-owned railways, there are new railway undertakings using the DB AG rail network.</p> <p>As DB AG is no longer part of the Federal Administration but an undertaking under private law, it has the right to calculate the fees for the use of the tracks it owns. The Federal Ministry of Transport exercises no influence in this respect. To implement the right of non-discriminatory access to the rail network, the Federal Ministry of Transport has set the rules for calculating such prices, but not indicating any price level.</p> <p>The introduction of competition for railway infrastructure capacity was one of the main objectives of the railway reform and the motive for the government's decision to transfer ownership of the track network to DB AG and not to levy fees, for the use of rail tracks.</p> |
| <p><b>Improvement in the finances of railway undertakings</b></p> | <p>A comprehensive financial restructuring occurred as part of the restructuring efforts for the railways owned by the Federal Republic, covering areas such as: a balance sheet clean-up, the elimination of debts of DEM 70 billion, the takeover of the additional financial burden due to the lack of productivity of Deutsche Reichsbahn plus the financing of investments to enable Deutsche Reichsbahn to catch up with the current state of technology, and a substantial reduction of staff costs by discontinuing their classification as public-service employees.</p>   |
| <p><b>Other</b></p>   | <p>Railtrack investment: Any investment into the rail network of the railways owned by the Federal Republic is done on the basis of the Federal Traffic Infrastructure Plan.</p>  |

| <b>Table II.11. Greece</b>   |   |
|--|---|
| <b>Legal independence</b>  | CH is a state company which operates under a regime of independence for management, administration and internal financial and accounting control. |
| <b>The separation of infrastructure management from railway operations</b> | Separate accounts are kept for train operations and infrastructure management. There is no separation however, at institutional level.            |
| <b>The financing of public service obligations</b>                         |   |
| <b>Market access for new operators</b>                                     | Directive 91/440/EEC applies and rights of access are granted to promote combined transport.  |
| <b>Improvement in the finances of railway undertakings</b>                 | Budget and accounts are maintained separately from the state The state covers all debts incurred by CH.   |
| <b>Other</b>   |   |

| <b>Table II.12. Ireland</b>  |  |
|--|--|
| <b>Legal independence</b>  | <p>Irish Rail is a subsidiary company of Coras Iompair Eireann (CIE) which is a statutory corporation established under the 1950 Transport Act. Irish Rail is established under the provisions of the 1986 Transport (Re-Organization of CIE) Act.</p> <p>The legal independence of Irish Rail, the company responsible for the operation of rail services in Ireland, predates Directive 91/440/EEC.</p>  |
| <b>The separation of infrastructure management from railway operations</b> | <p>Separate accounts of the business of transport services and the business of managing railway infrastructure are kept by Irish Rail, in accordance with Directive 91/440/EEC.</p>  |
| <b>The financing of public service obligations</b>                         | <p>The former Exchequer subsidy payment to Irish Rail has been replaced by a number of public service transport contracts with the company. Among other things, the contracts clearly specify the quantity and quality of services to be provided and what the State will pay in return.</p>   |
| <b>Market access for new operators</b>                                     | <p>Directive 91/440/EEC was transposed into Irish law by Statutory Instrument No 204 of 1996. The legislation allows for suitably qualified operators the right of access to the Irish railway network for international services and international combined transport operations.</p> <p>Ireland has enacted Directive 95/18/EC on the licensing of railway undertakings and Directive 95/19/EC on the allocation of infrastructure capacity and charging of infrastructure fees.</p> |
| <b>Improvement in the finances of railway undertakings</b>                 | <p>The uneconomic nature of rail services in Ireland is not expected to change significantly. Irish Rail is engaged in a capital intensive programme of rolling stock replacement and track and infrastructure renewal.</p>  |
| <b>Other</b>   | <p>Due to Ireland's geographical location, isolation from the European rail network, differences in the rail gauge and the uneconomic nature of rail services in the State, the impact of Directives 91/440/EEC, 95/18/EC and 95/19/EC will be very limited.</p>   |

| <b>Table II.13. Italy</b>  |   |
|--|---|
| <b>Legal independence</b>  | FS SpA, has been set up as a state-owned joint-stock company. A former government corporation, FS was first transformed into a government agency (1985), and was then given greater independence when it was incorporated as a state-owned company (1992). Although the State (Treasury) is the only share-holder and appoints the members of the Board, independence is a principle that is very much in evidence in the company's articles of incorporation.  |
| <b>The separation of infrastructure management from railway operations</b> | Separate accounting and substantive separation of infrastructure (ASA Rete) and operations have been effected. There is no institutional separation as yet.   |
| <b>The financing of public service obligations</b>                         | FS operates the network under franchise. There are also 27 regional companies providing local passenger services currently managed by FS but under Regional Government ownership. FS sets fares but can be required to modify them by Minister of Transport according to published criteria and in return for compensation.   |
| <b>Market access for new operators</b>                                     | <p>Up to now rail transport has been a monopoly, regulated by a franchise contract. Council Directives 95/18/EC and 95/19/EC have been implemented and bodies responsible for franchise and safety certification have been set up. Principles for access to the FS network by operators of other countries, in accordance with Article 10 of Directive 91/440/EEC, have been established. In addition to FS SpA, which operates the national passenger and freight transport network under franchise, there are regional rail companies which also provide services under franchise contracts, initially managed by FS SpA.</p> <p>Fees for access are intended to cover the difference between actual costs and Government infrastructure subsidies.</p> |
| <b>Improvement in the finances of railway undertakings</b>                 | Following the implementation of Directive 91/440/EEC a special fund was set up to service debts. All loans taken out by FS SpA to finance investments in the period prior to its incorporation as a joint-stock company were transferred to this fund and the State has assumed responsibility for both capital and interest payments.  |
| <b>Other</b>   | FS SpA is required to submit a privatization plan for its transport services. There are also plans to transfer responsibilities for local transport services to the Regions. These initiatives are aimed the reduction of direct Government intervention in the medium term: infrastructure will remain in the public sector, local transport services will be managed at regional level (not necessarily by the public sector), long-haul freight and passenger transport services will be privatized.   |

| <b>Table II.14. Luxembourg</b>   |   |
|--|---|
| <b>Legal independence</b>  | New statutes for the National Rail Company of Luxembourg (CFL) were introduced in 1997. CFL remained an independent state company, jointly owned by states of Luxembourg, Belgium and France, but its capital was increased and the administrative burden related to state supervision and management was reduced. Company accounts are to be maintained according to commercial practice.  |
| <b>The separation of infrastructure management from railway operations</b> | <p>The separation of infrastructure and operations was legislated for in 1995. The state oversees maintenance and modernization of the rail network together with international interconnections. Further, the state determines the construction of new lines and the extension or closure of existing lines.</p> <p>Management of the network is entrusted to CFL under contract to the State. The accounts of CFL for the management of the network are clearly separated from accounts for other activities.</p> |
| <b>The financing of public service obligations</b>                         | Under a 1993 regulation concerning the application of EU regulation 69/1191/EEC on the actions of Member states related to public service obligations in rail, road and inland waterways transport, the State has concluded contracts with CFL for the provision of public rail and road services. These contracts include clauses on the restructuring of the organization of CFL and improvement of productivity and efficiency related to the services offered.  |
| <b>Market access for new operators</b>                                     | <p>From 1995 it has been a legal requirement that, with respect to the management of rail infrastructure, that rail enterprises, established inside or outside Luxembourg, should have access to the network within the limits and conditions set out by EU law.</p> <p>The principle of establishing fees for the use of infrastructure was also provided for in 1995.</p>   |
| <b>Improvement in the finances of railway undertakings</b>                 | In 1997, the State took over the principal and interest of CFL debt. The State has also participated in an increase of the company's capital.   |
| <b>Other</b>   | CFL is a partner in a project for a new mass transport system in Luxembourg, the regional tram project.   |

| <b>Table II.15. The Netherlands</b>  |   |
|--|---|
| <b>Legal independence</b>  | In 1995, the Dutch government and Netherlands Railways (NS) made agreements about the future of the railways, the relationship between the state and NS and action in relation to infrastructure, privatization and other rail operators. NS became an independent company. In 1997 the government spent NLG 80 million for this purpose, while general aid will decrease to zero in the year 2000. From 1996 NS has set fares and timetables itself. The aim is to improve the quality of the services and to attract more passengers.   |
| <b>The separation of infrastructure management from railway operations</b> | <p>NS is divided into several business units: NS-Reizigers (passengers) and NSCargo (freight). Independent units were created for infrastructure provision, network maintenance, control of capacity and management of stations. The aim is to achieve growth in the number of passengers and the amount of freight and improve rail transport as an essential element of a coherent transport policy.</p> <p>Rail infrastructure in total is managed by three organizations: NS Railinfrabeheer, Railned and NS Verkeerleiding. NS Railinfrabeheer maintain infrastructure, build new infrastructure and keep it in good condition, Railned manages rail capacity and regulates access, NS Verkeersleiding will provide efficient and safe rail traffic management. These organizations are financed by the government and operate independently from railway companies on the basis of governmental guidelines.</p> |
| <b>The financing of public service obligations</b>                         | Rail services which are not commercially viable but in the public interest are funded by the State under a contract with NS.  |
| <b>Market access for new operators</b>                                     | NS may be subject to competition from other rail operators. In 1996, a new rail company started a passenger service between Amsterdam and IJmuiden - NS's first competitor. New companies may enter the rail freight market, too, and compete with NS Cargo. The government stimulates this competition by creating facilities for new railway companies. Competition is intended to provide an efficient market for rail freight and make rail transport competitive with road transport. The rail companies' (freight and passenger) transition to the new market situation will take several years, so for an initial period they are exempt from paying infrastructure fees. After 2000, companies will have to pay fees for the use of rail infrastructure.  |
| <b>Improvement in the finances of railway undertakings</b>                 |   |
| <b>Other</b>   |   |

| <b>Table II.16. Portugal</b>   |   |
|--|---|
| <b>Legal independence</b>  | CP is a state-owned company with legal independence.  |
| <b>The separation of infrastructure management from railway operations</b> | Accounting separation began in 1996 and organizational separation was implemented by Decree No 104/97 which created REFER EP, a public enterprise for the management of rail infrastructure.  |
| <b>The financing of public service obligations</b>                         |   |
| <b>Market access for new operators</b>                                     | <p>1995 a Decree was published regulating access to the domestic railway infrastructure for international rail transport services. This Decree transposes the rights of access provided for in article 10 of Directive 91/440/EEC into national legislation.</p> <p>A public tender was held for a new N-S link across the River Tagus.</p> <p>The Decree that created REFER EP established principles for the collection of fees for the use of rail infrastructure.</p> <p>The same 1995 Decree envisages for companies, under certain conditions, the right of access to the domestic railway infrastructure, in order to operate combined goods transport services.</p> |
| <b>Improvement in the finances of railway undertakings</b>                 |   |
| <b>Other</b>   | Portugal has established a regulatory body for the rail sector.   |

| <b>Table II.17. Spain</b>  |   |
|--|---|
| <b>Legal independence</b>  | Directive 91/440/EEC has been transposed into Spanish legislation.  |
| <b>The separation of infrastructure management from railway operations</b> | The railway company RENFE has split infrastructure and operations into separate business units within the same company.   |
| <b>The financing of public service obligations</b>                         |   |
| <b>Market access for new operators</b>                                     | <p>Access is permitted in conformity with Directive 91/440/EEC. There are no specific fees as yet.</p> <p>In terms of rights of access to promote combined transport access rights, according to the terms of Directive 91/440/EEC, are guaranteed, but RENFE is a partner in all such groupings.</p> |
| <b>Improvement in the finances of railway undertakings</b>                 | A multi-year contract between RENFE and the State determines RENFE's annual budget.   |
| <b>Other</b>   | In 1997, the State established, in 1997 a public company for the design, construction and management of a high speed corridor between Barcelona and Madrid.   |

| <b>Table II.18. Sweden</b>   |   |
|--|---|
| <b>Legal independence</b>  | SJ and other operators are fully independent for business purposes. However, the ownership of SJ remains with the state.  |
| <b>The separation of infrastructure management from railway operations</b> | Since 1988; the responsibility for infrastructure accounting has been held by Banverket, a state agency. Since the Government assumed the responsibility for providing rail infrastructure in 1988, infrastructure management has been totally separate from rail traffic operations.   |
| <b>The financing of public service obligations</b>                         | Both the state and local transport authorities have the right to purchase passenger transport to fulfil public service requirements. This must be done through tender. The government does not supervise prices.  |
| <b>Market access for new operators</b>                                     | In accordance with Directive 95/18/EC, licensed traffic operators have the right to gain access to state railway infrastructure. However, SJ has an exclusive position in inter-regional passenger traffic and retains rights for goods traffic. To access the network, applications are to be forwarded to Banverket. New operators include: MTAB, a new iron ore transport company set up in 1996 (main owner: iron ore company LKAB; joint owners: SJ and NSB); two small companies operating a few railcars on two regional services; eight small freight operators, mainly with feeder traffic for SJ, have been operating for a few years. Track-user fees were introduced in 1988 and based on variable + fixed fees. Freight transport using combined transport pays no fixed infrastructure user fees in order to promote this type of transport. All fees are decided by the Government. The variable fees cover the marginal costs of operating the trains including not only the wear and tear on rails and catenary but also external costs like accidents and emissions. The fixed fees are calculated as annual fees per axle in different weight classes for various types of wagons and per pulling axle for locomotives. State income from the charges is about 30 per cent of the total infrastructure maintenance costs. There is no competition for infrastructure capacity slots. |
| <b>Improvement in the finances of railway undertakings</b>                 | SJ debts for infrastructure and for some obsolete assets for the operation were assumed by the state in 1988 in order to give SJ a fresh start. The operators no longer have any financial responsibility for state-owned infrastructure. They pay fees in the same way as on the road transport operators. There are neither public service obligations nor other traffic obligations. SJ has restrictions on the level of its debts and is allowed to sell assets and subsidiaries within set limits.   |
| <b>Other</b>   | Swedish transport policy emphasizes safety and environmental issues. The competitive situation in Sweden concerning rail freight has been changed by allowing higher axle loads and longer permissible length for lorries in Sweden. In addition, tax on diesel vehicles has been reduced.  |

| <b>Table II.19. United Kingdom of Great Britain and Northern Ireland</b>   |   |
|--|---|
| <b>Legal independence</b>  | Railway undertakings in the United Kingdom are legally separate from Government and have autonomy in managing their own affairs. For a period, almost all of the rail industry was transferred to the private sector, including 100 per cent of passenger services. In October 2002, the infrastructure provider Railtrack was taken over by a not for profit organization - Network Rail.  |
| <b>The separation of infrastructure management from railway operations</b> | <p>In 1996 state-owned British Rail was privatized, which entailed the disintegration of its activities into 100 separate parts, and each one was sold or franchised separately. Engineering functions and rolling stock were sold, train operation was franchised, and ownership of the infrastructure, such as track, signalling and stations, was passed onto a new organization, Railtrack. Railtrack was formed as a separate company in 1994, and was privatized in 1996. In 2001 the government placed Railtrack in administration as the mounting costs of maintaining the rail infrastructure had caused severe financial problems. Railtrack's role of managing the rail network was taken over by a not for profit organization - Network Rail in October 2002. In October 2003 Network Rail, following criticisms over the cost and standards of engineering maintenance works transferred responsibility and staff from its sub-contractors to itself.</p> <p>Passenger services are managed and operated by the private sector through a franchising system; and a Rail Regulator has been set up to oversee the industry and ensure no party abuses any access rights to the infrastructure.</p> |
| <b>The financing of public service obligations</b>                         | The franchising system has been designed to ensure that private operators can operate unprofitable - or socially necessary services.  |
| <b>Market access for new operators</b>                                     | <p>Train operating companies, both passenger and freight, can gain access to the rail network through commercial access agreements with Network Rail. Access agreements, and the charges included in them, are subject to approval by the independent Rail Regulator.</p> <p>Infrastructure charges for franchised passenger operators are essentially determined, through the award of the franchise, whereas other potential passenger operators (open access operators) would be free to negotiate charges as are all freight operators. Competition in the passenger transport market is limited to protect franchisees (that compete periodically for the market). Plans to open this market to competition on the tracks have progressed slowly.</p>  |
| <b>Improvement in the finances of railway undertakings</b>                 | The Government pays compensation payments for rail services via the Franchising Director.   |
| <b>Other</b>   |   |

Arrangements for imposing public service obligations and providing commensurate compensation from public funds are critical to the commercial freedom of railway operators and to the financial viability of the sector. Most EU Member states have introduced contracts that meet the aims of the Regulation. The United Kingdom and Finland have moved furthest in making ex-ante negotiation of PSO packages part of competitive tendering for passenger operations introducing ex-ante negotiation of the service levels required and the financial compensation to be paid is the key to the commercialization rail operations.

In most EU countries, tariffs for domestic passenger services are determined or at least approved by Government although in some this applies only to certain types of ticket (for example, to standard second class tickets in the United Kingdom). Tariff regulation usually takes the form either of multi-year agreements on trends in maximum tariffs or Government review of all tariff changes. Government passenger tariff policies generally attempt to balance covering costs with concerns to keep the cost of rail travel relatively low for low income groups. The emphasis tends to vary over time and between countries. Negotiation is likely to be important in arriving at stable tariff structures. Where a disaggregated industry structure is adopted, an independent regulator offers the most transparent structure for tariff regulation. Freight services are subject to much less tariff regulation than passenger services in the EU.

In accordance with provisions of 91/440/EEC, all EU States have separated infrastructure from operations for accounting purposes. Accounting separation is intended to promote efficiency in infrastructure management and in railway operation by providing for a tighter focus on each of these two distinct activities and should provide for transparency in the use of public funds in the railways. Separation of accounts is also an essential step towards enabling new railway undertakings to exercise access rights by providing a basis for the development of infrastructure charges that are fair and non-discriminatory. Many railways have gone further than the separation of rail operations and infrastructure management required by 91/440/EEC and made extensive use of contractual relations between different business units to improve the definition of management responsibilities.

A step by step approach has been adopted, at the European level, for the liberalization of access to infrastructure. Directive 91/440/EEC provided for the promotion of international groupings of national rail companies by guaranteeing such groupings non-discriminatory access to infrastructure for the provision of freight services and international passenger services. In all cases the directive covers only international services and only international combined transport operators enjoy full non-discriminatory access to track in all EU Member States. However, individual countries are going further in liberalizing access to infrastructure, for example Germany intends eventually to open all rail markets to competition. The Netherlands has adopted an approach of allowing access rights with the process controlled by the Ministry of Transport. Priority is assigned to domestic passenger services and on main lines new operators may use spare capacity. In the United Kingdom, there is open access for freight, as there was before privatization. Access rights have been limited for passenger services by the Rail Regulator's moderation of the competition provisions, designed to provide some initial protection to franchise operators both from new entrants and each other.

The development of tariffs for the use of infrastructure varies greatly between EU Member countries - most have identified procedures for setting fees, and a number have laid down precise rules for the structure and level of fees. In others, infrastructure companies, or divisions, are responsible for setting charges. The objective of most governments that have set rules for infrastructure fees is to cover costs, differentiating fees to reflect such factors as type of service, wear on track, distance of run, routing, etc. In the United Kingdom, charges for open access operators are negotiated between Network Rail and the train operators but are required by the Rail Regulator to lie between variable costs at the margin and “stand alone” costs (i.e. the cost that would be incurred if an operator had to provide its own infrastructure).

There have been relatively few new international operators emerge to date but more progress has been made in introducing competition and greater efficiency for domestic services, perhaps because no intergovernmental agreement or reciprocity is required. For example, some local passenger services and short line operations for freight have been contracted to new entrants in Sweden. Germany has opened up the whole national network for access and it is possible for the DB AG network to be used by local passenger services and short line freight operators. In the Netherlands, Lovers Rail has been allowed to compete with NS on one passenger service. In the United Kingdom, all rail passenger services have been franchised and all freight assets sold, each without associated track.

ECMT<sup>46</sup> argues that although there is no evidence that the provisions of Directive 91/440/EEC have had any direct impact on freight operations so far, the mere existence of laws providing access rights may have acted as a catalyst for change. Also these reforms are ones which may be expected to take time. Not only must the national railways adapt to the new laws, but there is also a need for innovative firms to emerge to take advantage of the opportunities created by access rights. The two countries that have so far undertaken the most radical reforms (Sweden and the United Kingdom) have demonstrated that infrastructure separation and even privatization can have substantially positive, but with some adverse, effects on rail services. Both traffic and infrastructure conditions have improved in Sweden. In the United Kingdom, passenger and freight demand have improved substantially and rapidly. Private sector investment is substantially higher than under Government ownership. While certain aspects of the United Kingdom approach, for example the large number of private enterprises, might not be repeated elsewhere, others, such as the importance of correct access charges and the continuing need for government involvement, must receive careful review by all other governments. Despite the critical press coverage of a number of accidents, both freight and passenger traffic in the United Kingdom have grown faster than in any other EU country over the same time period.

### **Section III**

#### **New EU Member States joining in 2004<sup>47</sup>**

Outside of the European Union, the countries set to join it in 2004 are following the restructuring promoted by the Commission, to ensure there are no obstacles to them

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<sup>46</sup> ECMT ‘Railway Restructuring in Europe’ 1998. OECD. Paris.

<sup>47</sup> Comprising Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

joining the Union (even if the 2001 railway Directives came too late to be part of the set of laws they must compulsorily conform to). Table II.20 describes the current situation amongst those new entrants to the EU with national railways.

| <b>Table II.20. The Railways of New EU Member States joining in 2004</b> |  |   |  |
|--|--|---|--|
| <b>Country</b>   | <b>Legal Status</b>  | <b>Vertical Separation</b>  | <b>Network Access</b>  |
| <b>Czech Republic</b>  | CD, Czech Railways, is a state organization with a separate legal identity but statutes that significantly limit commercial freedom. Maximum tariffs are set by the Ministry of Finance, except for freight. | Separation of accounts and financial flows for infrastructure and operations implemented in practice.   | Legal basis exists for new train operators but no new operators to date.   |
| <b>Estonia</b>   | Estonian Railway Ltd., Edelraudtee Ltd. and EVR Koehne Ltd. are joint stock companies with separate legal identities and that are currently owned 100 per cent by the state.                                 | There are separate accounts for infrastructure and services. Network subsidies are to be provided by earmarked taxes in the future.           | Non-discriminatory access rights exist.  |
| <b>Hungary</b>   | MAV is a state-owned joint stock company. PSOs are covered by a three-year contract with the state.  | The government controls and sets passenger tariffs. Accounting has been separated between infrastructure and train services divisions of MAV. | Legal basis for reciprocal access rights exist, though practical dispositions have yet to be determined.   |
| <b>Latvia</b>  | LaR is a state-owned joint stock company.  | Accounting for infrastructure and rail services was separated in 1997 with an organizational separation in 1998.                              | Competition for passenger traffic exists between public and private companies to a limited degree.   |
| <b>Lithuania</b>   | LiR is a state-owned joint stock company. From 1998 PSOs will be covered by a contract with the state. Freight tariffs are set by the company, passenger tariffs by the government.                          | Separate business units for infrastructure and rail services, with separate accounts, were established within LiR in 1998.                    | Access is provided for by the 'railway code'. New operators have to obtain a licence and to conclude a contract with the 'infrastructure manager' on the use of infrastructure capacity. |

|                 |  |  |   |
|-----------------|--|--|---|
| <b>Poland</b>   | PKP, Polish State Railways, is a state-owned enterprise with management autonomy. PSOs are compensated in accordance with the Budget and under an accord between the Treasury and PKP. The Government sets tariffs for passenger traffic, and for the transport of coal and iron ore where PKP is dominant.            | From 1999 two separate organizations were created within PKP for the management of the rail infrastructure and train services. | PKP management is obliged to grant access to railway operators on the basis of mutual agreement, and in the case of foreign operators, through intergovernmental agreement. |
| <b>Slovakia</b> | ZSR is a state enterprise with separate legal identity but statutes that significantly limit commercial freedom. PSOs are covered by contract, but other legal provisions allow the state to delay payments due to state budget difficulties. Tariffs are controlled by the state with the exception of freight rates. | Accounting separation<br>Only for infrastructure and services.   | Network Access provided for by law.   |
| <b>Slovenia</b> | SZ (Slovenske železnice) is a state-owned joint stock company. The Government controls passenger tariffs.  | Accounting separation<br>Only for infrastructure and services.   | Network Access provided for by law.   |

It is noteworthy that Poland has decided on the vertical separation of infrastructure and train services and has announced the intention to bring private sector operators into freight and passenger services through privatization, concessioning, or the creation of new operators. Further Poland has started to spin off suburban operations to local authorities. The World Bank is now implementing a loan to the new Polish Railway (PKP SA) to help in financing a program of labour transition. Estonia has concessioned the operation of a small part of its railway and has awarded the operation of its freight railway and infrastructure to a private concessionaire.

#### **Section IV** **EU Applicants<sup>48</sup>**

Bulgaria and Romania should accede to membership of the EU in 2007, whilst Turkey is a candidature country. Table II.21 gives details of the current position of the railways in these countries.

<sup>48</sup> Comprising Bulgaria (who are expected to join the EU in 2007), Romania and Turkey.

| <b>Table II.21. The Railways of EU Applicant States</b> |  |  |  |
|---|--|--|--|
| <b>Country</b>  | <b>Legal Status</b>  | <b>Vertical Separation</b>   | <b>Network Access</b>  |
| <b>Bulgaria</b>   | BDZ is a state enterprise with a separate legal identity but statutes that significantly limit commercial freedom. PSOs are covered by a contract. The Minister of Transport supervises prices, excluding freight rates.   | Accounts for train services and for the network infrastructure are separated.  | There is no legal basis for access by new operators to the rail network.   |
| <b>Romania</b>  | CFR is a state enterprise with separate legal identity but statutes that significantly limit commercial freedom, under the authority of the Ministry of Transport. PSOs are covered by contract.   | CFR is an integrated utility, with separation at the level of business units.  | Access is allowed by law after consultation with CFR.  |
| <b>Turkey</b>   | TCDD is a State Economic Enterprise. TCDD carries out its activities in accordance with commercial and economic principles and determines its tariffs freely, according to market conditions. Public Service Obligations are set out in a contract with the State. | Studies are underway regarding the separation of infrastructure and operations and their re-organization as independent business units with separate financing and accounting. | The new Railway Law provides free access to the railway network for third parties. A new operator can be licensed by the government to operate a particular route. |

Romania has decided on a vertical separation models where infrastructure and train services are separate business units. In addition, Romania has announced the intention to bring private sector operators into freight and passenger services through either privatization, concessioning, or creation of new operators. In addition, local authorities are taking responsibility for suburban train services.

## **Section V**

### **European Free Trade Area (EFTA)<sup>49</sup>**

Of the EFTA countries, only Norway and Switzerland have a significant railway industry.

In Norway, since 1996 the operations part of NSB has been established as a state-owned limited company (NSB BA) and the infrastructure transferred to a state body (Jernbaneverket). There is an annual agreement between the Government and NSB on

<sup>49</sup> Comprising Iceland, Liechtenstein, Norway and Switzerland.

public service obligations. The regulations embodied in Directive 91/440/EEC has been applied in Norway. Regulations have also been developed to allow competitive access to new train operators and rail track fees have existed since 1990. Fees are cost-based and are adjusted to achieve fair competition between modes. The idea is to equalize the levels of cost coverage amongst modes. Passenger traffic pays no fees for rail infrastructure.

Switzerland has recently undertaken railway restructuring with the objective of making the railways more competitive, thus improving the net benefit for the public authorities. Restructuring has led to the separation of railway policy and railway management functions, greater operational freedom and the introduction of an element of competition into the railway system. Restructuring has also eased the issue of debt relief for the Swiss Federal Railways (CFF). From an organizational and legal standpoint, CFF has been transformed from an unincorporated body into a state-owned joint stock company. The restructuring of the railways has ensured a clearer division of responsibilities between the Federal Government and CFF. Federal Government intervention is now confined to setting policy and financial objectives. Although the Federal Government will continue to be responsible for investment, CFF now has sole operational responsibility. In order to achieve these objectives, the Federal Council and CFF are to set jointly-agreed corporate targets every four years, as set out in a Service Agreement. The Swiss Parliament now sets a spending ceiling for CFF (excluding regional transport) for the same period, in line with the targets set in the Agreement. The Service Agreement and the spending ceiling effectively establishes the framework within which the company is to operate. The company is solely responsible for implementing the Agreement. If it fails to meet targets, it will be subject to penalties such as the withdrawal of automatic cover for operating deficits. For railway undertakings, the restructuring programme provides for separate accounting and sometimes total separation of infrastructure and operations, which were previously integrated. This will end cross-subsidization and ensure the necessary transparency. Only separate accounting is planned for small and medium private railways and narrow-gauge railways. The larger private railways will be required to introduce separate accounting in the same way as the restructured CFF.

In terms of market access for new operators - under the previous structure State and private railways are largely the only providers of passenger and freight services on their own infrastructure. In order to provide access to the network, for domestic service providers, restructuring will be required although the Swiss rail network is already being used by "third parties" for long-distance international passenger transport and freight transport, under bi-lateral agreements. Pricing for access will take into consideration market conditions and seek to obtain maximum prices for particularly lucrative services. The State has stipulated that transport sector should cover short-term marginal costs at least and the idea that an operator should meet all infrastructure costs has been rejected.

Swiss Federal Government loan repayments have been a drain on the CFF's finances. Long term commitments were four times as high as equity capital funding at the time of restructuring. In fact, CFF was unable to meet either capital or interest payments on past infrastructure loans. Interest payments were met largely by the Federal Government as infrastructure appropriations. Its past debts have therefore been written off, and its pension fund will be taken over by the State, as part of the restructuring process. This has increased CFFs indebtedness to the Federal Government and the

transaction has been shown on the balance sheet but the financial and profit and loss accounts have been unaffected.

## **Section VI** **CIS Countries<sup>50</sup>**

Most Governments in central and Eastern Europe are pursuing deep restructuring in response to the end of the command economy and collapse of their traditional markets, and by 1999 achieved growth in freight and passenger transport for the first time since 1989. However, the impact of the collapse on their railways was severe. On average, these railways in 2000, carried only half the freight traffic they were carrying in 1989, and only about 60 percent of the passenger traffic (some are doing worse). Traffic has stabilized and is even growing slowly in some countries. None of them have been able to fully maintain and rebuild their systems and some have become intolerable financial burdens on their national budgets. Railway restructuring is following different paths, to that in the EU, conditioned by local market and political conditions. Russian Railways are discussed in detail in Chapter 3

Perkins<sup>51</sup> has suggested that, on the face of it, almost all of Europe is reforming its railways towards a single model of competing train operators using a network run by separate infrastructure managers. Steps towards this model are required in all Member States of the EU by European Directives. However, the reforms adopted nationally differ greatly, and even where similar restructuring patterns exist they were often adopted to address very different problems and achieve different goals. Whilst the European railway policies are referenced by the need to create competition and prevent any abuse of monopoly powers by the railways, individual countries also seek to address many other important issues.

In summary, there are three areas of particular importance to maximising the benefits that disaggregating railway systems can yield<sup>52</sup>:

- (i) Government must focus on getting the structure and regulation right for the key elements of natural monopoly, investment planning, time-tabling and dispatch;
- (ii) The prices charged for access to infrastructure must be transparent and understandable, and should clearly reflect government policy as to the way in which infrastructure is to be used; and
- (iii) Government PSO and other compensation payments, and other support, must be provided as efficiently as possible, avoiding leakage and ensuring that the results match the policy goals for providing support.

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<sup>50</sup> Comprising the Belarus, Russian Federation and Ukraine.

<sup>51</sup> Stephen Perkins. 'An Overview of Rail Reform in Europe' Seminar on Railway Reform, Restructuring and Competition Beijing. Organized by: Development Research Centre of the State Council of China and the OECD, 28-29 January 2002.

<sup>52</sup> ECMT 'Railway Restructuring in Europe' 1998, OECD, Paris.