

**SERVRAIL study – Assessment
of present and likely future
conditions of providing rail-
related services**

Final Report

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1. EXECUTIVE SUMMARY

Introduction

- 1.1 Steer Davies Gleave Ltd, in collaboration with Uniconsult GmbH and ProgTrans AG is pleased to present the Final Report for the SERVRAIL project, focusing on the assessment of present and likely future conditions of providing rail-related services.
- 1.2 This study looks at the manner in which rail-related services are currently being provided in the markets reviewed, and the manner in which demand and supply will evolve in future.

Rail-related services

- 1.3 Chapter 3 sets out a brief description of the rail-related services that we looked at in this study; these services are:
- Supply of traction current;
 - Supply of traction fuels;
 - Services in passenger stations, including their buildings and other facilities;
 - Services in freight terminals, including security;
 - Services in marshalling and shunting yards;
 - Train formation services;
 - Services in storage sidings;
 - Maintenance, inspection and cleaning of rolling stock and repair services, distinguishing between heavy and light maintenance activities;
 - Back-up services;
 - Locomotive pushing services;
 - Services in border stations;
 - Train driver and other staff training services;
 - Provision of on board train protection systems;
 - Telecom and communication services;
 - Telematics services for freight operations;
 - Computer reservation services for passenger transport; and
 - Leasing of rolling stock and staff.

Market forecasts for rail-related services

- 1.4 A key element of this project is the provision of forecasts of the markets for rail-related services in 2010 and 2015. The forecasts were based on specific parameters for each service, and demonstrate key trends and critical factors relating mainly to demand patterns, as well as identifying any particular issues relating to data sources.
- 1.5 In addition to the continuing liberalisation of the rail freight market, the forecasting process has addressed the effects of the potential opening of the rail passenger market, as well as the growth in the competitive tendering of concessions to operate public passenger services, creating opportunities for new market entrants and greater scope to offer new or improved services.
- 1.6 The data that we have received to input into the forecasting process is by no means complete in some areas; however, we have integrated the information we have received from industry stakeholders with other sources of information, which has enabled us to undertake a meaningful forecasting exercise.

Access conditions analysis and industry consultation

- 1.7 We have undertaken extensive industry consultation. This was done in order to collect the necessary data inputs to the forecasting process, to evaluate the respective stances of a range of stakeholders, and to gain an appreciation of stakeholder experience both in accessing rail-related facilities and services, and in operating these facilities and providing offers of such services. A summary of the key comments that we obtained through our stakeholder interviews is included in Chapter 5.
- 1.8 **Our discussions with operators, users and institutions have identified a number of problems with the current market situation that need to be addressed: these include the wide variation in charges for rail-related services and their lack of transparency; access to training facilities; access to (and charging for) depot and freight terminal facilities, marshalling and shunting services and services in border stations.**
- 1.9 **A common theme recurring throughout the consultation process is that major problems still need to be resolved in some countries. However, a number of stakeholders recognise that many of the difficulties encountered are introductory or transitional problems due to the fact that the opening of the rail market and competitive market entry are still relatively new processes; they consider that the problems should be resolved as more experience is gained, and as the procedures and safeguards themselves are revised and developed to reflect lessons learned.**
- 1.10 **The infancy of the market entry process is also a reason for the limited number**

of complaints received to date regarding access to, or the conditions of supply of, rail-related services. In general, regulatory bodies do not expect this situation to last, and anticipate an increase in the workload of complaints and appeals as the rate of market entry increases across EU Member States. Having said that, these consultees also emphasised that all stakeholders should remain vigilant to ensure that current, transitional problems and temporary barriers to access to rail-related services do not evolve into permanent structural features of the market.

- 1.11 **The impact of the difficulties encountered in accessing rail-related services should not be underestimated, simply because of their transitional or temporary nature. Some of the stakeholders contacted explained that the problems continued to impact heavily on their commercial activities and were stifling business growth.**
- 1.12 The majority of stakeholders contacted were keen to take part in the study and have provided us with substantial information as well as insightful and thought-provoking commentaries on the current scale, structure and functioning of the market for rail-related services. However, this did not apply to all railway undertakings. A small number have refused to take part in this study in any form, and/or have denied our requests for interview.
- 1.13 **Our analysis of the prices charged for rail-related services shows that there is often little price transparency; furthermore, when prices are made available they are rarely comparable internationally, as the parameters that are used to determine charging principles are very different between networks.**
- 1.14 Our case study has shown that the access conditions to the rail-related services within some EU Member States are not clear; as a consequence, it can be difficult for new entrants and current industry participants to make informed and sound business decisions on launching and developing offers of rail services, and investing in rail transport equipment.
- 1.15 Our analysis has been able to draw out a number of best practice approaches to providing information to potential customers, with the Network Statement produced by the Norwegian rail infrastructure manager being the most useful example.
- 1.16 **To further aid the transparency of access to rail-related services and facilities provided by public entities, all Network Statements should contain information regarding:**
- **The opening times of key facilities;**
 - **A list of the documentation required to access the facility (if any is required);**
 - **The capacity available in the facility;**

- **The charges for accessing the facility;**
- **The services offered and equipment available in these facilities; and**
- **Contact details of the people necessary to arrange access to these facilities (if different from the One-Stop-Shop).**

Legislative analysis

- 1.17 Our country-by-country analysis confirmed that all the networks reviewed meet the requirement to offer the minimum access package as defined in the relevant Directives. However, the categorisation of the remaining services varies between networks: certain elements are included within the minimum access package; some are included as services that must be provided on a non-discriminatory basis; whilst others are defined as discretionary, and hence are implicitly considered to be of less significance to market entrants. The consequence of these variations is that some national regimes are non-compliant with Directive 2001/14 in terms of their obligation to ensure non-discriminatory access to rail-related services.
- 1.18 It will be important to rectify variations that prevent compliance with Directive 2001/14. There are clear guidelines within the Directive on the way in which rail-related services should be categorised, differentiating between services whose provision is compulsory and those that are optional. These guidelines should be enforced and respected on each rail network (and enhanced in terms of scope and detail, if required) so that a potential market entrant can easily establish the services whose provision is obligatory on a non-discriminatory basis, and differentiate such services from those that need only be offered on a discretionary basis.
- 1.19 **We have identified that there are some omissions in the provisions of railway legislation as currently drafted, both at national and at an international level: we consider that these omissions should be rectified to ensure the market in rail-related services within and across EU Member States can reach its full potential, and that networks are fully compliant with the requirements of the Directive.**

Expected demand and supply patterns

- 1.20 In the work carried out to date and included in Chapter 5, we have identified a number of rail services where market entrants currently face critical problems: these services include staff training, access to terminals, and access to shunting and marshalling facilities and services. These findings have been brought together with the demand and supply forecasts in Chapter 4 and the legislative analysis undertaken in Chapter 6, so as to provide a complete picture with respect to the evolution of likely demand and supply patterns in rail-related facilities and services over the forecasting time-horizon.
- 1.21 **Taking all these factors into consideration, we consider that there is likely to be a shortfall in the supply of some rail-related services, and that action needs to be**

taken in these areas to ensure that disequilibrium does not persist.

Policy recommendations

1.22 Chapter 8 provides a series of policy recommendations going forward, in the light of the conclusions of the analysis described above. These recommendations point to improvements that can be achieved in terms of:

- **Legislative intervention;**
- **The preparation of guidelines; and**
- **The preparation of common, agreed documents and templates to facilitate transparency and access.**

2. INTRODUCTION

Preface

- 2.1 Steer Davies Gleave Ltd, in collaboration with Uniconsult GmbH and ProgTrans AG, is pleased to present the Final Report for the SERVRAIL project. This is a study of the present and likely future conditions for the provision of rail-related services, and an assessment of the markets for such services.
- 2.2 This study follows directly from the RAILIMPLEMENT study also undertaken by Steer Davies Gleave for the European Commission, looking at the implementation of the First Infrastructure Package of Directives. These Directives, and specifically Directive 2001/14/EC, specify the range of rail-related services and set out the requirements for access and the charging principles to be adopted.

Process

- 2.3 Our proposal was submitted to the European Commission at the end of September 2005 and we were awarded the contract at the end of December 2005. In January we took part in a kick-off meeting organised by the Commission to understand the detail and key study objectives of the Commission. We have subsequently organised further internal meetings to refine and optimise our strategy and research methodology.
- 2.4 The Draft Interim Report was submitted on 29 May 2006 and the updated version taking into consideration the comments of the Commission, was submitted on the 1st August and was accepted in September 2006. The Draft Final Report was submitted to the Commission in October 2006. This report represents the Final Report.

Liberalisation background

- 2.5 Since the creation of the European Union, the principal goal of the European Commission and the Community as a whole has been to increase the efficiency and competitiveness of national markets through the reduction of cross border barriers, through market opening and by closer economic integration. In the 1980s, this concept spread to the provision of industrial public services whose markets might become -or might be made- contestable to some degree.

Initial liberalisation attempts

- 2.6 In its first attempt to transfer these policy goals to railway sector, the European Commission initiated a number of reports and actions, culminating in the

implementation of Directive 91/440/EC. The aim of this directive was essentially to ensure and increase the independence of the management of the railway undertakings. With its implementation, the Commission took the first steps towards ensuring greater transparency in the finance, structure and accessibility of the national railways of EU Member States. Directive 91/440/EC required accounting, but not managerial, separation of infrastructure and operations, and included provisions requiring Member States to reduce the railways' historic debts and to introduce financial regimes to ensure equilibrium between costs and revenues. The Directive also created, for the first time, limited access rights for railway operating companies to enter into international groupings to run cross border services. The Commission's initiative was followed by a number of other Directives:

- Directive 96/48/EC on the interoperability of the trans-European high-speed rail system (subsequently modified by Directive 2001/16/EC);
- Directive 95/18/EC on the licensing of railway undertakings; and
- Directive 95/19/EC on the allocation of railway infrastructure capacity and the charging of infrastructure fees.

2.7 The 1996 Commission White Paper: "A strategy for revitalising the Community's railways" pointed out a number of shortcomings in the Directives that had been published to date, and emphasised that further co-ordinated action was required to address the fact that rail's market share was still declining, and that the financial performance of many national railway undertakings was still not in equilibrium. As a consequence, the Commission has developed further packages of legislative measures.

The first railway package

2.8 The First Railway Package is made up of Directives 2001/12/EC (modifying 91/440/EC), 2001/13/EC (modifying 95/18/EC) and 2001/14/EC (modifying 95/19/EC). Achieving political agreement by end of 2000, these three Directives were adopted in February 2001 and published on 15 March 2001 with the requirement that they be transposed into national law by 15 March 2003.

2.9 The directives enable any railway undertaking that is licensed within the European Union to have access on an equal and non-discriminatory basis to the Trans European Rail Freight Network, and subsequently to the national rail networks of Member States. More specifically, it imposes the following obligations on the industry:

- A clear definition of the relevant responsibilities of the industry participants; especially of rail infrastructure managers and of railway undertakings.
- Separation of railway undertakings and capacity allocation bodies; there must be a separate allocation body if the infrastructure manager is organisationally linked to a railway undertaking
- A requirement for the infrastructure manager to publish a "Network Statement" setting out the nature and capability of the network, tariffs, conditions of use and

capacity allocation rules;

- Separation of accounting for freight and passenger services;
- Separation of railway undertakings from the entity issuing licences;
- Rights of access for all operators of international freight services from 2008, but with no provision for cabotage;
- Provisions to declare infrastructure to be “congested”, resulting in a requirement to carry out capacity analyses and develop capacity enhancement plans where economically viable; and
- Provision for a common timetable change date on the second Sunday in December (included in a subsequent regulation).

The second railway package

- 2.10 This Package, proposed by the Commission in January 2002 and adopted in April 2004, aimed to further the progress made in the first package. It comprises Regulation 881/2004/EC, together with Directives 2004/49/EC, 2004/50/EC and 2004/51/EC.
- 2.11 The aim of the second package was to accelerate the liberalisation of rail freight services by opening the international rail freight market across all national networks by 2006, and also allowing cabotage by 2007. In addition, the Package created a “European Railway Agency”, which has now been set up in Valenciennes, France, to provide technical support to the development of cross-border interoperability. The package also introduced common procedures for accident investigation; this includes a requirement for the establishment of a Safety Authority in each Member State, conceived as an independent investigator on safety matters.

The third railway package

- 2.12 While still in the process of implementing the second railway package, the Commission has developed a Third Railway Package. The main provision put forward by the Commission focuses on the liberalisation of international rail passenger transport by 2010, but this package also includes provisions for EU wide certification of train crews, and the creation of international rail passengers’ rights and obligations.
- 2.13 In 2004, as part of the 3rd railway package the Commission also submitted to the Council and the European Parliament a proposal for a regulation on compensation in cases of non-compliance with contractual quality requirements for rail freight services (COM(2004)0144 – C6-0004/2004 – 2004/0050(COD)), discussions on this issue are currently stalled.

Terms of reference

- 2.14 The overarching aim of the Commission is to revitalise the rail sector across Europe, and to establish a common railway area founded on open markets and closer cross-border integration, both of infrastructure management and of train service operations. In undertaking the SERVRAIL study, the Commission wishes to understand the current structure, scale and functioning of the market for rail-related services and its likely evolution, so as to ensure non-discriminatory access to fundamental rail-related services, accompanied by fair and efficient pricing policies for activities that are key components of a competitive and efficient rail transport market.
- 2.15 The main aim of the study is to assess and describe the current situation regarding the provision of rail-related services and to assess the manner in which these services are being provided to both the rail passenger and freight sectors. In addition, the study is to estimate current service capacity as well the determinants and levels of demand and supply, and to recommend appropriate action where necessary, with the aim of facilitating the key policy objectives mentioned in the previous paragraph.
- 2.16 The main tasks that we were requested to undertake are the following:
- To conduct a survey in all countries covered by the project looking at the following areas:
 - § The legislation currently in force and the manner in which it is being applied in practice ‘on the ground’;
 - § The prices for rail-related services;
 - § Capacity of the facilities for rail-related services and the degree of their utilisation;
 - § Structure of demand and supply for rail-related services; and
 - § Problems or complaints in relation to the provision of these services.
 - To provide forecasts for the level and structure of the market for rail-related services for the year 2010 and 2015.
 - To evaluate the current access conditions for rail-related services and the forecast market for these services, as well as assessing the need for intervention to ensure the adequate and efficient future provision of rail-related services.
 - To analyse the position of the industry stakeholders on the subject of the project
 - To submit a report on the findings making any necessary recommendations to remedy any shortcomings.
- 2.17 The Commission asked the study to review the following rail-related services:

- Supply of traction current;
- Supply of traction fuels;
- Services in passenger stations, including their buildings and other facilities (e.g. timetable information, through-ticketing, passenger rest facilities, security, etc.);
- Services in freight terminals, including security;
- Services in marshalling and shunting yards;
- Train formation services;
- Services in storage sidings;
- Maintenance, inspection and cleaning of rolling stock and repair services, distinguishing between heavy and light maintenance activities;
- Back-up services (e.g. towing away broken down locomotives and trains);
- Locomotive pushing services (e.g. required in regions with severe track gradients);
- Services in border stations (e.g. access to devices to change power systems etc.);
- Train driver and other training services;
- Provision of on-board train protection systems;
- Telecom and communication services (i.e. analogue or digital train communication services);
- Telematics services for freight operations (e.g. tracking and tracing, etc.);
- Computer reservation services for passenger transport; and
- Leasing of rolling stock and staff.

2.18 The study is to cover all current Member States of the EU in 2006, the EEA and Switzerland, as well as Bulgaria and Romania.

Our approach

2.19 We decided to pursue the assessment through four overlapping workstreams following the general requirements of the terms of reference:

- Workstream 1: Survey of the legal and practical access conditions and economic aspects of the provision of rail-related services, and Stakeholder analysis programme.
- Workstream 2: Forecasts of the supply, structure and demand for rail-related services for the years 2010 and 2015.
- Workstream 3: Evaluation of current and expected future market structures and patterns as well as access conditions and an assessment of the need for action
- Workstream 4: Policy recommendations to submit to the Commission

Networks to be assessed

- 2.20 Within this Final Report we have covered all EU Member States as well as Norway, Switzerland, Bulgaria and Romania. When discussing the UK in this report, we will separate out the networks of Great Britain and Northern Ireland due to their very different characteristics, although the implementation of the Directives applies to both (subject to derogations)¹. We did not assess those States within the EU that do not currently have a railway (Cyprus and Malta), and we have considered the network of Lichtenstein in conjunction with that of Austria as it is wholly administered by ÖBB, the Austrian rail operator.

Workstream 1: Survey of the legal and practical access conditions and stakeholder analysis

- 2.21 The first workstream is a fundamental step towards the completion of the Final Report and to defining the detail available to feed into subsequent workstreams. The main tasks that have been carried out in this workstream are:
- A survey of the scope of legislation covering rail-related services in EU Member States, including a review of implementation in practice;
 - A linked survey on the access conditions applicable to rail-related services, including the identification of any problems or complaints that have arisen in relation to the provision of these services (to be followed by a more detailed assessment in workstream 3 following the forecasting phase);
 - A data survey based on a standard data request form, to obtain key inputs into the forecasting process; and
 - Industry consultation on stakeholders' attitudes, activities and actions in relation to rail-related services.

Network clustering

- 2.22 Due to constraints on the time and budget for this project, we proposed that a thorough but targeted approach would be followed, with study resources being focussed on areas of highest priority. Our proposal stated that while all the countries stipulated in the terms of reference would be covered by the initial survey of legislation on rail-related services, it would be more effective to undertake the resultant demand and supply forecasting by amalgamating data into a set of geographical clusters, taking a number of examples of key services and markets from the clusters through the subsequent stages of the forecasting process.
- 2.23 We proposed clustering the countries as follows, reflecting the geographical position

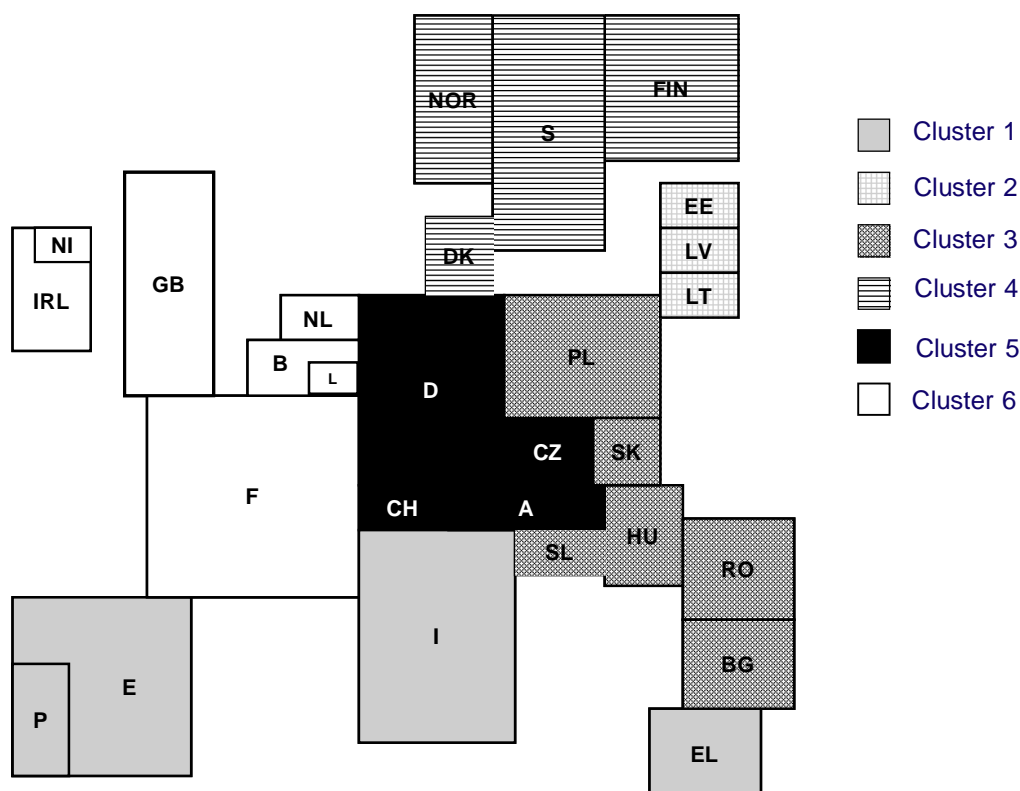
¹ The country chapter for Northern Ireland is included at the end of the Great Britain Chapter

of the networks concerned, and our assessment of their current status in terms of market opening:

- Network Cluster 1: South EU (Greece, **Italy**, **Spain** and Portugal)
- Network Cluster 2: Baltic States (**Estonia**, Latvia, Lithuania)
- Network Cluster 3: Eastern Europe (Bulgaria, **Hungary**, **Poland**, **Romania**, Slovakia, Slovenia)
- Network Cluster 4: Scandinavia (**Norway**, **Sweden**, Finland, Denmark)
- Network Cluster 5: Central EU (**Germany**, Czech Republic, **Austria**, **Switzerland**)
- Network Cluster 6: Western EU (**France**, **Belgium**, Ireland, Luxembourg, Netherlands and **United Kingdom**)

2.24 The market forecasts undertaken in the second workstream will reflect this cluster structure: we have provided forecasts for 1 example in cluster 2, 2 examples from each of clusters 1 and 4, and 3 examples from each of clusters 3, 5 and 6. The sample countries to be analysed are those shown in bold above. The figure below sets out the clustering in a schematic layout.

FIGURE 2.1 NETWORK CLUSTERING



Source: Steer Davies Gleave analysis

Services

- 2.25 Our initial analysis of the data we received from the stakeholders focused on assessing the interdependences and the correlations between the various services offered. Where we identified that the market for individual services exhibits similar and/or converging profiles as a result of our initial analysis and our wider discussions with industry stakeholders, we have aggregated our analysis to ensure that similar services are treated in a consistent manner.

Workstream 2: Forecast of the supply, structure and demand for rail-related services for the years 2010 and 2015

- 2.26 The Commission asked us to forecast market patterns and to base our baseline analysis on previous studies. This analysis involved utilising the information obtained through the data collection phase in the previous workstream, to prepare forecasts for the market for rail-related services in 2010 and 2015. Although the modelling process enables exogenous factors to be explicitly taken into account in constructing the forecasts, the approach adopted focussed on preparing the unconstrained market forecasts required to feed into the analysis in the following workstream.

Workstream 3: Evaluation of the current and expected future market patterns as well as access conditions and assessment of the need for action

- 2.27 The work undertaken in this workstream builds on in our Interim and Draft Final Reports. The analysis assessed the likely evolution of the markets for rail-related services by means of a synthesis between the unconstrained results of the marketing forecasting exercise, an assessment of the current and expected market positions of key stakeholders in the various networks, and our review of the provisions of national legislation governing market access conditions to establish its fitness for purpose. The latter is critical to our assessment of the robustness of the evolutionary trend towards competitive markets, and our diagnosis of any need for further policy intervention.

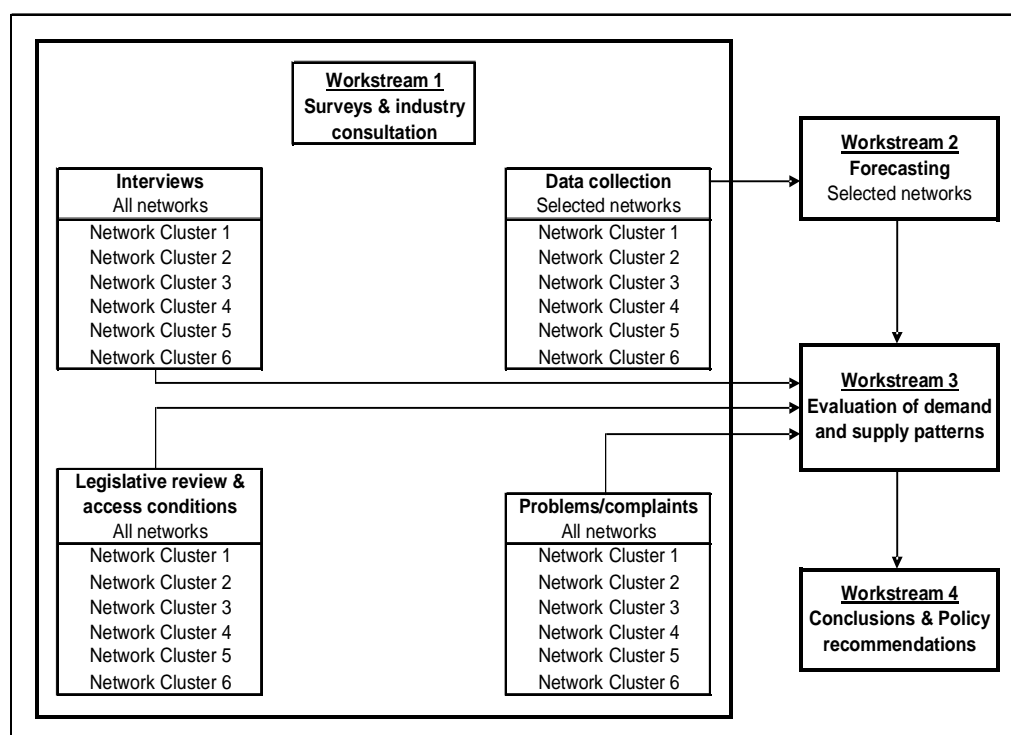
Workstream 4: Conclusions and policy recommendations

- 2.28 As stated in our proposal, to conclude the study, we collated our analysis in a chapter that proposes the policy recommendations necessary to address the specific problems that we identified in the structure and functioning of the markets under review.
- 2.29 Any recommendations that have been made reflect the current situation on market opening within the EU rail industry, but also take into consideration further liberalisation initiatives that currently are being discussed at EU level.

Summary of approach

- 2.30 To summarise our approach, the figure below shows a schematic breakdown of the work to be undertaken for each workstream.

FIGURE 2.2 SCHEMATIC BREAKDOWN OF WORKSTREAMS



Source: Steer Davies Gleave proposal

Sourcing data

- 2.31 A crucial input to this study is the information that we have obtained from industry stakeholders, both in the form of quantitative data and through direct interviews with key industry players. As a result, the outputs within this Final Report are heavily dependent on the level of information provided by the various stakeholders within Europe. This in turn has been supplemented by our own knowledge and by public information sources.
- 2.32 Although our aim was to provide a complete stakeholder analysis for each of the networks reviewed, some industry participants elected not to contribute: this is discussed further in the consultation chapter. Our timescales were delayed as a result of the unwillingness of one important stakeholder, Deutsche Bahn, to participate in the study. Only very recently has information been forthcoming from Deutsche Bahn but only in the form of responses to our stakeholder interviews; this stakeholder has not

provided the quantitative data needed as an input into the forecasting workstream. Fortunately, we have been able to obtain a significant proportion of the information required from other sources.

Scope of this report

- 2.33 This report covers all the areas of the terms of reference and builds on the work that has been undertaken in the Interim Report.
- 2.34 Our terms of reference are focused on rail-related services and as a result this report does not discuss issues of access to the main network or the administrative procedures necessary for licensing and safety certification: these areas were covered in our previous study, RAILIMPLEMENT.
- 2.35 Many of the services under review are required for the operation of rail passenger and rail freight services. However, in the majority of countries where rail services are effectively open to market entry, new entrants comprise rail freight operators rather than rail passenger companies, reflecting the principal focus of EU rail legislation since Directive 91/440/EC. As a consequence, the majority of examples used in this report focus on services provided to rail freight operators. However, during the market forecasting process and the subsequent discussion of future levels of demand and supply for rail-related services, our approach has been to focus equally on freight and passenger services.
- 2.36 All prices are expressed in Euros unless otherwise stated, and where necessary, currency conversion has used mid May 2006 exchange rates. This report and its appendices take into consideration information received and legislative changes until the end of September 2006.

The organisation of this report

- 2.37 This Draft Final Report is set out as follows:
- Chapter 1: Executive Summary
 - Chapter 2: Introduction and background to the report
 - Chapter 3: The rail-related services
 - Chapter 4: Market forecasting
 - Chapter 5: Access conditions analysis and industry consultation
 - Chapter 6: Legislation analysis
 - Chapter 7: Expected demand and supply patterns
 - Chapter 8: Policy recommendations

- 2.38 In addition to these chapters, there are two technical appendices:
- 2.39 **Technical Appendix A** that sets out for each network under review, the legislative background, the access conditions and the views and opinions of key stakeholders.
- 2.40 **Technical Appendix B** that sets out the details of the approach and the results of the demand and supply forecasting undertaken.

3. RAIL-RELATED SERVICES

Directive 2001/14/EC and rail-related services

- 3.1 The key provisions covering rail-related services are included in Directive 91/440/EC as amended by Directive 2001/12, and in Directive 2001/14/EC. Directive 2001/14/EC looks at many of the key aspects of track access including capacity allocation and the establishment of regulatory bodies, and deals with rail-related services and the charging principles for those services in Article 5 and 7, as well as in Annex II of the directive. The text below is taken directly from Directive 2001/14/EC and demonstrates the legal framework that has been introduced at a European Union level:

Article 5

Services

1. Railway undertakings shall, on a non-discriminatory basis, be entitled to the minimum access package and track access to service facilities that are described in Annex II. The supply of services referred to in Annex II, point 2 shall be provided in a non-discriminatory manner and requests by railway undertakings may only be rejected if viable alternatives under market conditions exist. If the services are not offered by one infrastructure manager, the provider of the “main infrastructure” shall use all reasonable endeavours to facilitate the provision of these services.

2. Where the infrastructure manager offers any of the range of services described in Annex II, point 3 as additional services, he shall supply them upon request to a railway undertaking.

3. Railway undertakings may request a further range of ancillary services, listed in Annex II, point 4 from the infrastructure manager or from other suppliers. The infrastructure manager is not obliged to supply these services.

Annex II

Services to be supplied to the railway undertakings:

1. The minimum access package shall comprise:

- a) handling of requests for infrastructure capacity;
- b) the right to utilise capacity which is granted;
- c) use of running and track points and junctions;
- d) train controlling including signalling, regulation, dispatching and the communication and provision of information on train movement;
- e) all other information required to implement or operate the service for which capacity has been granted.

2. Track access to services facilities and supply of services shall comprise:

- a) use of electrical supply equipment for traction current, where available;
- b) refuelling facilities;
- c) passenger stations, their buildings and other facilities;
- d) freight terminals;
- e) marshalling yards;
- f) train formation facilities;
- g) storage sidings;
- h) maintenance and other technical facilities.

3. Additional services may comprise:

- a) traction current;
- b) pre-heating of passenger trains;
- c) supply of fuel, shunting, and all other services provided at the access services facilities mentioned above;
- d) tailor-made contracts for:
 - control of transport of dangerous goods,
 - assistance in running abnormal trains.

4. Ancillary services may comprise:

- a) access to telecommunication network;
- b) provision of supplementary information;
- c) technical inspection of rolling stock.

3.2 This study focuses mainly on those services included in paragraphs 2, 3 and 4 of Annex II, and assesses the level of market opening in the provision of these services. However, it also reviews the contents of the minimum access package offered in each country analysed, in order to compare the various services that are included within this package on each network.

3.3 The aim of this section of the Directive is to ensure that all railway undertakings are treated equally and in a non-discriminatory manner when accessing essential parts of the network that are crucial to the effective and efficient running of rail freight or passenger services. It remains the case that a number of these services are provided by a monopoly supplier and as such need to be regulated and monitored to ensure that the supplier does not discriminate against any parties and also to ensure that operational efficiency is improved.

- 3.4 Open and equal access to key rail-related services is crucial in facilitating the growth of rail freight, which itself is a key goal of the liberalisation provisions within the First EU Railway Package. To ensure growth, new operators entering the rail freight market require the implementation of a legal framework guaranteeing equal treatment when they apply for access to a number of these services (for example access to terminals and shunting yards), in terms both of the capacity allocated and the charges levied for access to these services. Pivotal to this is not only that the legislation implemented should contain the correct provisions, but also that procedures are enforced correctly on a domestic and international basis, and that operators of rail-related services are incentivised to act in a manner that fosters open and equal access.

Description of the services

- 3.5 Before evaluating the ways in which the range of rail-related services are being dealt with on in the various networks, it is necessary to provide a brief description of the various services included in the Directive that operators are required to pay for in addition to charges levied for the minimum access package. The descriptions included below are to facilitate an understanding of the nature of the services offered, and have been agreed with Commission.

Supply of traction current

- 3.6 The supply of electricity for the propulsion of electric traction rolling stock. This supply involves both the use of the electrification infrastructure as well as the use of the current itself that travels along the infrastructure. In some networks, the provider of the current is different from the provider of the electrification infrastructure.

Supply of traction fuel

- 3.7 The provision of access to fuelling points for diesel powered rolling stock, as well as the supply of the diesel fuel itself. In some networks, access to the fuelling facility is granted by one party, and the fuel itself is offered by another.

Services in passenger stations

- 3.8 Access to, and use of, facilities within passenger stations by the relevant operator for the purpose of running passenger services and including services relating to passenger information systems, through-ticketing, passenger rest facilities, security, use of station building facilities, etc.

Services in freight terminals

- 3.9 Access to, and use of, freight terminal facilities for the purpose of running, loading and unloading freight trains; this also includes the use of any necessary machinery within the terminals to undertake these activities.

Services in marshalling and shunting yards

- 3.10 Movement and formation of rolling stock (i.e. the assembly of individual vehicles into trains) in these yards, which are often equipped with rail brakes and other specialised equipment designed to efficiently arrange freight trains for departure.

Train formation services

- 3.11 Services to organise and prepare rolling stock for operational service, undertaken in passenger stations or other locations with sidings or several running tracks, where trains can be prepared and assembled from individual vehicles or groups of vehicles.

Services in storage sidings

- 3.12 Parking facilities in sidings relating to the temporary or longer-term storage of rolling stock off the main running lines.

Maintenance, inspection and cleaning of rolling stock

- 3.13 Services related to the routine and emergency maintenance of rolling stock, as well as testing and inspection, and light and heavy cleaning of rolling stock.

Back-up services

- 3.14 The provision of back up locomotives and rolling stock to reduce the disruption caused to other network users and to ensure the continued movement of a freight or passenger train, in the event that the original traction unit fails and cannot complete the service.

Locomotive pushing service

- 3.15 The provision of additional locomotives added to existing services to be able to traverse sections of track with a steep gradient. In some networks, pushing is not allowed and the additional traction is used to pull the train.

Services in border stations

- 3.16 The provision of services and facilities at border crossings necessary to enable rail services to transit from one country to another; these services include changing traction and rolling stock in the event that there are different track gauges or different power requirements, the checking of freight and passenger documentation where required, technical inspections, etc.

Training services

- 3.17 The provision of access to training facilities so as to train rail drivers and other safety critical staff and prepare them for their activities on the networks over which they are to work.

Provision of on-board train protection systems

- 3.18 The provision and installation of necessary on-board train protection systems by the rail equipment supply industry, as well as the testing of the coordination and interaction between these on-train facilities and track-based equipment and signalling.

Telecom and communication services

- 3.19 The provision of all types of communication systems to operators using the rail networks.

Telematics services for freight operations

- 3.20 Access to services related to the tracking and tracing of rolling stock and/or freight consignments transported in that rolling stock.

Computer reservation services for passenger transport

- 3.21 Access to and use of electronic reservation systems for passenger services in the various networks.

Leasing of rolling stock and staff

- 3.22 Provision of rolling stock and staff in leasing to operators across networks to avoid the substantial initial and sunk costs of acquiring new vehicles, and to reduce manpower costs. In the case of the latter, it should be noted that on some networks, the leasing of

staff is not allowed due to domestic law.

4. MARKET FORECASTING

Introduction

- 4.1 The workstream related to demand and supply forecasting for 2010 and 2015 was undertaken by our project partners, Prograns AG, based on the data collection activity undertaken by Steer Davies Gleave and Uniconsult on publicly available statistical information, and utilising Prograns' own extensive internal knowledge and experience in relation to forecasting in the railway environment.
- 4.2 The study established a chain of dependency of demand for rail-related services through intermediate variables and parameters. The study identified the trends and the relationship between intermediate variables for the period to 2010 and the period 2010 to 2015, and showed the expected trends for each service or – in a small number of cases – for clusters of services, in contrast to the forecast of total market performance.
- 4.3 The demand forecasts have been carried out at national or territorial level and subsequently aggregated for the whole EU plus the relevant non-EU countries.
- 4.4 On the supply side, forecasts were difficult to obtain. The basic hypothesis that was adopted was that supply would be built up in response to demand trends. A detailed discussion on the demand and supply side patterns in terms not only of quantitative forecasts but also of the access conditions, industry consultation and legislative impact is included in Chapter 7.
- 4.5 This chapter summarises the approach, the results and the findings from this analysis. The tables included below have been grouped by the clusters mentioned in Chapter 2; a description of the full process and analysis is attached to this report in Appendix B.

Methodology

- 4.6 The basis for the development of the forecasts has comprised the data on rail-related services in each of the countries represented in each of the chosen clusters. For most countries, the data received from questionnaires and interviews was incomplete and, in some cases, poor. Consequently, the analysis was supplemented by published

statistical data and used as its baseline the ASSESS report². The basic quantitative framework for the forecasting exercise consisted of the following variables:

- Transport volume for passenger transport (passengers);
- Transport performance in terms of passenger-kilometres (pkm) and tonne-kilometres (tkm);
- Traffic performance in terms of train-kilometres (train-km) and vehicle-kilometres of tractive units (vkm); and
- Average load/occupancy (tonnes per freight train; passengers per passenger train).

Market development – passengers

- 4.7 Using the methodology described above, we identified variations in passenger performance and volume over the study period, so as to derive the demand and supply forecasts for each individual rail-related service shown in the following sections

TABLE 4.1 RAIL PASSENGER TRANSPORT PERFORMANCE

Country	Passenger transport performance							Yearly	Yearly
	(billion pkm)							variance	variance
	1990	1995	2000	2004	2005	2010	2015	2004-2010 (% p.a.)	2010-2015 (% p.a.)
Cluster 1	67.8	66.9	73.1	75.0	73.4	79.9	82.0	1.1%	0.5%
Cluster 2	10.5	2.8	1.6	1.4	1.6	1.5	1.7	0.8%	2.0%
Cluster 3	100.2	53.0	44.5	40.1	37.7	40.3	41.2	0.1%	0.5%
Cluster 4	16.9	17.3	19.6	20.2	20.5	21.7	22.2	1.2%	0.5%
Cluster 5	83.7	106.8	109.1	106.9	109.3	116.7	123.1	1.5%	1.1%
Cluster 6	116.0	108.1	132.2	142.4	145.4	157.6	163.9	1.8%	0.8%
EU-23	-	316	348	356	359	386	399	1.1%	0.7%
27 Networks	-	355	380	386	388	418	434	1.0%	0.8%

Source: Transport & Mobility Leuven; Eurostat, EC, ECMT, UIC, ProgTrans AG, national statistics Note: data for EU23 and EU27 Networks for 1990 missing as a result of gaps in the data available for some networks

- 4.8 The yearly variance (that is, the average growth rate per year), is shown for the period 2004 - 2010 and 2010 - 2015. The rail passenger transport performance in the European Union shows a continuous growth which should reach 400 billion

² Transport & Mobility Leuven et al.: Assessment of the contribution of the TEN and other transport policy measures to the midterm implementation of the White Paper on the European Transport Policy for 2010, Final Report, prepared for the European Commission, DG TREN, Leuven, 28 October 2005.

passenger-kilometres in 2015. The new Member States should accumulate about 10% of that share. The growing demand for rail passenger transport in the EU is generally driven by the growth in the pre-2004 Member States; however the average yearly growth will slow down in the period 2010 - 2015 to roughly 0.7%. In the new Member States, demand will decline slightly.

- 4.9 The estimated passenger transport volume is based on time series statistical data for all networks. The analysis is based on the average distance per passenger between 1990 and 2004 and assumes that the average distance travelled would not change from 2000 to 2010 and 2015 respectively. Absolute growth rates of the transport performance were used to obtain 2010 and 2015 passenger transport volume estimates, as shown in the table below.

TABLE 4.2 RAIL PASSENGER TRANSPORT VOLUME

Country	Passenger transport volume (million passengers)							Yearly variance 2004-2010 (% p.a.)	Yearly variance 2010-2015 (% p.a.)
	1990	1995	2000	2004	2005	2010	2015		
Cluster 1	955	1,027	1,092	1,151	1,183	1,256	1,308	1.5%	0.8%
Cluster 2	211	66	34	36	38	33	37	-1.6%	2.4%
Cluster 3	-	809	684	563	528	637	642	2.2%	0.2%
Cluster 4	320	340	396	429	267	434	444	0.2%	0.5%
Cluster 5	1,557	2,169	2,465	2,859	2,567	2,628	2,769	-1.3%	1.1%
Cluster 6	2,043	1,966	2,315	2,568	2,634	2,722	2,827	1.0%	0.8%
EU-23	-	5,789	6,466	7,083	-	7,168	7,433	1.0%	0.7%
27 Networks	-	6,377	6,987	7,607	7,216	7,710	8,027	1.0%	0.8%

Source: Eurostat, EC, ECMT, UIC, national statistics and own estimates Note: data for Cluster 3 for 1990, data for EU23 and EU27 Networks for 1990 and data for EU23 for year 2005 is missing as a result of gaps in the data available for some networks

- 4.10 The development of the demand for rail-related services is often linked to the traffic performance (measured in train-kilometres of passenger/freight trains). Therefore, we collected statistical data on train-kilometres for 1990 to 2005 (See Table 4.4). We then calculated the average occupancy per train by dividing transport performance by traffic performance. The table below shows the average number of passengers per train, demonstrating the volatility of the data, often without showing a clear tendency or trend.

TABLE 4.3 PASSENGER OCCUPANCY RATES

Country	Average occupancy (passengers per train)						Yearly variance 2004-2010 (% p.a.)
	1990	1995	2000	2004	2010	2015	
Cluster 1	-	140	145	138	143	143	0.6%
Cluster 2	-	100	74	83	70	70	-2.5%
Cluster 4	110	105		92	88	88	-0.8%
Cluster 5	-	-	86	84	85	85	0.1%
Cluster 6	112	-	-	115	119	119	0.7%
EU-23	145	115	110	106	107	107	0.1%
27 Networks	138	113	109	105	105	105	0.1%

Source: Eurostat, EC, ECMT, UIC, national statistics and own estimates Note: variance not available for Greece, Luxembourg, Sweden, Great Britain and Cluster 3; data for some Clusters from 1990 to 2000 is missing as a result of gaps in the data available for some networks

- 4.11 For the interpretation of the occupancy indicator, it is important to note that changes in average train occupancy may not only indicate changes in load factors (proportion of on-train capacity utilised), but also reflect changes in train types or configurations, and improvements in train services offered (higher frequencies, more spacious trains, etc). In the EU, there is no clear trend with reference to increasing or decreasing occupancy rates. In some countries such as Belgium, Germany, Estonia, Spain, the Netherlands, Austria, Poland and Switzerland we expect a (slight) increase in the average number of passengers per train from 2000 to 2010. However, in France, Italy, Latvia, Hungary and Norway we foresee a decline. Finally, we have assumed that the occupancy figures will not change substantially between 2010 and 2015.
- 4.12 As a final forecast for the passenger market, the study also estimated the traffic performance figures for 2010 and 2015, they are shown in the table below.

TABLE 4.4 PASSENGER TRAFFIC PERFORMANCE

Country	Passenger train movements						Yearly	Yearly
	(million train-km)						variance	variance
	1990	1995	2000	2004	2010	2015	2004-2010 (% p.a.)	2010-2015 (% p.a.)
Cluster 1	-	429	-	488	495	508	0.2%	0.6%
Cluster 2	-	27	21	16	22	24	5.5%	2.0%
Cluster 4	154	164	-	217	239	244	1.7%	0.5%
Cluster 5	638	-	1,118	1,093	1,175	1,236	1.3%	1.0%
Cluster 6	884	-	-	1,066	1,124	1,167	0.9%	0.8%
EU-23	-	-	-	2,918	3,061	3,165	0.8%	0.7%
27 Networks	-	-	-	3,101	3,266	3,386	0.9%	0.7%

Source: Eurostat, national statistics and own calculations Note: no data available for Cluster 3; data for some Clusters from 1990 to 2000 and data for EU23 and EU27 Networks from 1990 to 2000 is missing as a result of gaps in the data available for some networks

- 4.13 In aggregate, our analysis shows that the volume of passenger traffic performance will increase; however there was no clear, common trend between the networks being analysed. This results from variations in the development of transport performance and also the differing evolutions of occupancy rates.
- 4.14 In Belgium, for example, traffic performance (train-km) will decrease in contrast to the transport performance (pkm); as the occupancy rate increases. In Germany, the traffic performance will grow by 1% from 2004 to 2010 and then by 1.1% to 2015 on a yearly average.

Market performance – freight

- 4.15 The study also analysed the general trends in the rail freight market based on transport performance (measured in tonne-kilometres), the average load (measured in tonnes per freight train) and the traffic performance (measured in train-kilometres). To derive estimates of freight traffic performance, we used the same methodological approach as we used to forecast traffic performance in the rail passenger market. The table below sets out the forecasts for the average yearly variance in freight transport performance.

TABLE 4.5 FREIGHT TRANSPORT PERFORMANCE

Country	Goods transport performance (billion tkm)						Yearly variance 2004-2010 (% p.a.)	Yearly variance 2010-2015 (% p.a.)
	1990	1995	2000	2004	2010	2015		
Cluster 1	21.3	35.0	37.0	35.8	34.5	36.6	-0.6%	1.2%
Cluster 2	44.8	20.8	30.3	40.7	46.2	51.7	2.2%	2.4%
Cluster 3	161.5	109.4	84.6	78.4	79.3	80.9	0.2%	0.4%
Cluster 4	31.8	33.7	34.6	35.3	36.0	36.9	0.3%	0.5%
Cluster 5	86.3	128.8	134.4	142.3	148.0	151.3	0.7%	0.4%
Cluster 6	79.3	72.8	86.9	81.6	78.3	81.4	-0.7%	0.8%
EU-23	-	357.1	373.9	379.9	384.4	399.3	0.2%	0.8%
27 Networks	-	400.5	407.8	414.0	422.3	438.7	0.3%	0.8%

Source: Transport & Mobility Leuven; Eurostat, EC, ECMT, UIC, ProgTrans AG, national statistics Note: data for EU23 and EU27 Networks for 1990 is missing as a result of gaps in the data available for some networks

- 4.16 In overall terms, the demand for rail freight transport will increase by almost 1% per annum on average, although the growth from 2010 to 2015 is expected to be higher than for the period 2004 - 2010. An exception to this overall trend is Spain where the yearly change is expected to be negative from 2004 – 2010, but positive between 2010 and 2015. In contrast, the transport performance in Romania is forecast to increase then decrease.
- 4.17 The study also gathered statistical data on traffic performance in freight transport (train km) and calculated the average load per freight train (tonnes) for 1990 to 2005. our approach took into account the development of freight train load factors in the last 10 years, estimated the average load for 2010 in each network separately, and then assumed that the average load will not change from 2010 to 2015 (see the following table).

TABLE 4.6 AVERAGE LOAD PER TRAIN IN FREIGHT TRANSPORT

Country	Average load (tonnes per train)						Yearly variance 2004- 2010 (% p.a.)
	1990	1995	2000	2004	2010	2015	
Cluster 1	-	253	289	361	331	331	-1.4%
Cluster 2	1,091	1,285	1,431	1,610	1,733	1,733	1.3%
Cluster 4	367	416	444	460	463	463	0.1%
Cluster 5	325	-	395	424	438	438	0.5%
Cluster 6	295	-	-	403	408	408	0.2%
EU-23	-	521	566	590	604	604	0.4%
27 Networks	-	498	540	565	580	580	0.4%

Source: Eurostat, EC, ECMT, UIC, national statistics and own estimates. Note: no data available for Cluster 3; data for some Clusters from 1990 to 2000 and data for EU23 and EU27 Networks for year 1990 is missing as a result of gaps in the data available for some networks

- 4.18 In most networks, the efficiency of the rail freight market (expressed as average tonnes loaded per train) will be higher in 2010 compared to 2000. Only in the Czech Republic, Italy, Hungary, Poland, Sweden and Switzerland, do we expect a slight decrease of average load factors per train.
- 4.19 Based on the load factor estimates and the transport performance, it is possible to calculate the future level of traffic performance in the rail freight market. Table 4.7 shows the past development and the 2010 and 2015 estimates. We have no data for Romania and Bulgaria. With the exception of the Slovak Republic we forecast that traffic performance will increase from 2010 to 2015 in all countries.

TABLE 4.7 RAIL FREIGHT TRAFFIC PERFORMANCE

Country	Freight train movements (million train-km)						Yearly variance 2004-2010 (% p.a.)	Yearly variance 2010-2015 (% p.a.)
	1990	1995	2000	2004	2010	2015		
	1990	1995	2000	2004	2010	2015		
Cluster 1	-	119.5	-	115.3	105.8	111.9	-1.4%	1.2%
Cluster 2	6.4	16.2	21.3	25.4	27.1	30.4	1.1%	2.4%
Cluster 4	74.7	71.6	67.0	70.5	71.8	73.7	0.3%	0.5%
Cluster 5	267.3	-	338.3	335.1	348.9	360.0	0.7%	0.6%
Cluster 6	262.0	-	-	195.8	179.5	186.6	-1.4%	0.8%
EU-23	-	-	-	799.3	789.1	816.5	-0.2%	0.7%
27 Networks	-	-	-	843.1	834.9	867.4	-0.2%	0.8%

Source: Eurostat, EC, ECMT, UIC, national statistics and own calculations Note: no data available for Cluster 3; data for some Clusters from 1990 to 2000 and data for

EU23 and EU27 Networks from 1990 to 2000 is missing as a result of gaps in the data available for some networks

Demand for rail-related services

Energy consumption

- 4.20 As a premise for this section, it is worth noting that in order to assess the development of future energy consumption in the rail sector, the following parameters must be considered:
- Variation in the traffic performance (vehicle-kilometres) of tractive units (locomotives, railcars);
 - Variation in the share of electric tractive units and of the share of diesel tractive units respectively; and
 - The energy efficiency of tractive units; i.e. the specific energy consumption per vehicle-kilometre.
- 4.21 Furthermore it should be noted that the variation of this parameters will be affected by the following trends:
- Growing demand for rail transport services in all categories (freight, long-distance passengers, local/regional passengers);
 - Similarly growth in rail traffic performance (train-km) except in regional rail sectors where service levels are not likely to expand (increased patronage will, instead, lead to better occupancy of trains and use of higher capacity trains);
 - Progressive electrification of networks and the abandonment of lines with little usage (usually non-electrified); increasing the share of electric traction; and
 - No clear trends regarding energy efficiency (specific energy consumption per train-km or vehicle-km); a decrease is noted in certain countries, with an increase in others.
- 4.22 Published forecasts of energy consumption by country show a significant increase in fuel efficiency, and hence a long-term decline in total energy consumption for rail transport. As shown below, this amounts to a forecast overall decline in total energy consumption³ by railways from 2005 to 2010 by 6%, and a further 13% decline from 2010 to 2015. From statistical data, we conclude that consumption of electrical energy is expected to remain broadly stable in overall terms, while diesel consumption is likely to decline significantly.

³ Total energy consumption of railways is measured in toe (tonne of oil equivalent).

TABLE 4.8 TOTAL ENERGY CONSUMPTION OF RAILWAYS

Country	Energy consumption of railways (1000 toe per year)						Yearly variance 2000-2010 (% p.a.)	Yearly variance 2010-2015 (% p.a.)
	1990	1995	2000	2005	2010	2015		
Cluster 1	1,423	1,582	1,829	1,820	1,677	1,346	-0.8%	-3.9%
Cluster 2	385	220	201	243	274	274	3.6%	0.0%
Cluster 3	1,863	1,472	1,239	1,083	879	765	-2.9%	-2.6%
Cluster 4	568	672	646	661	623	549	-0.4%	-2.4%
Cluster 5	3,104	2,986	2,915	2,852	2,695	2,410	-0.8%	-2.1%
Cluster 6	2,611	2,889	2,981	3,033	2,847	2,520	-0.4%	-2.3%
EU-23	9,122	8,810	8,895	8,859	8,291	7,224	-0.7%	-2.7%
27 Networks	9,954	9,821	9,811	9,692	8,995	7,864	-0.8%	-2.5%

Source: Eurostat, EC

- 4.23 Focussing on the way energy is consumed, based on the train-kilometre forecasts and the estimates of the level of the ratio for 2010 and 2015, we calculated the vehicle-kilometres for 2010 and 2015⁴. The following table shows the evolution of the share of vehicle-kms in each network.

⁴ We calculated the train-kilometres of all trains by adding the train-kilometres of passenger and freight trains.

TABLE 4.9 MOVEMENTS OF TRACTIVE UNITS (LOCOMOTIVES AND RAILCARS)

Country	Share of vkm of electric traction units in total vkm [%]								
	1990	1995	2000	2001	2002	2003	2004	2010	2015
Belgium	81	86	87	88	88	88		90	90
Czech Republic	-	47	49	51	52	53	53	55	55
Denmark	48	-	42	46	-	-	-	46	46
Germany	74	-	74	75	75	-	-	77	77
Estonia	-	20	17	20	22	23	-	23	23
Greece	-	-	2	2	2	1	-	2	2
Spain	67	80	80	81	82	-	83	85	85
France	65	75	79	78	78	77	-	80	80
Ireland	13	-	-	-	-	-	-	12	12
Italy	-	78	80	-	83	-	-	87	87
Latvia	-	44	40	39	38	37	38	38	38
Lithuania	-	12	5	6	9	10	10	10	10
Luxembourg	54	-	-	-	-	-	-	65	65
Hungary		52	57	58	58	59	-	60	60
Netherlands	87	-	-	-	-	-	-	88	88
Austria	-	-	-	-	-	-	-	84	84
Poland	-	78	81	82	82	81	80	80	80
Portugal	-	49	-	-	-	-	-	57	57
Slovenia	-	60	63	65	67	67	68	75	75
Slovak Republic	-	56	-	-	-	-	-	60	60
Finland	51	54	61	64	66	68	67	75	75
Sweden	88	89	-	-	-	-	-	93	93
United Kingdom	44	-	-	-	-	-	-	44	44
Norway	75	74	76	76	-	-	-	78	78
Switzerland	97	-	-	-	-	-	-	98	98
EU-23	61	59	54	54	57	51	57	60	60
27 Networks	65	60	56	55	57	51	57	62	62

Source: Eurostat and own estimates Note: data for Bulgaria and Romania not available; some data not available for other networks

- 4.24 Additional analysis on electricity consumption has been undertaken and the results included in Appendix B. In general it has been not possible to identify any clear trends in energy efficiency (specific electricity consumptions) with the exception of Belgium, the Czech Republic, France and Finland.
- 4.25 Assuming that the change in electricity consumption in relation to stations and other

facilities remains unchanged (which should be the case if efficiency changes in lighting is not considered), then the amount of electricity consumption is directly proportionate to the change in vehicle kms of electric traction units, and as such the growth figures should be those included in the table above.

- 4.26 The increasing share of electric traction vehicle-kms will result in an increase in demand for electricity. However, in some countries diesel traction units are often used by new entrants and as a result this could affect the evolution of the traction vehicle-kilometres. Nevertheless, we assume that the trend of the share of electric traction vehicle-kilometres will continue to increase.

Demand for diesel traction fuel

- 4.27 Following the same principles as set out in our forecasts of the demand for traction current, the demand for diesel traction fuel should follow the demand for diesel vehicle kms minus a small percentage to take account of increased fuel efficiency resulting from improved technology. These forecasts are shown in the table below.

TABLE 4.10 DEVELOPMENT OF TRAFFIC PERFORMANCE OF DIESEL TRACTIVE UNITS

Country	Movements of diesel tractive units (million vkm)						yearly variance 2000-2010 (% p.a.)	yearly variance 2010-2015 (% p.a.)
	1990	1995	2000	2004	2010	2015		
Belgium	28	18	19	-	14	14	-3.1%	0.5%
Czech Republic	-	116	97	84	88	89	-1.0%	0.4%
Denmark	43	-	52	-	54	56	0.4%	0.6%
Germany	210	-	360		307	322	-1.6%	1.0%
Estonia	-	11	12	-	12	13	0.0%	2.4%
Greece	18	24	23	-	27	29	1.6%	1.3%
Spain	74	39	39	35	36	39	-0.8%	1.6%
France	192	151	147	-	152	158	0.3%	0.9%
Ireland	13	12	-	-	14	14	-	1.0%
Italy	-	85	82	-	53	53	-4.2%	0.0%
Latvia	-	20	17	16	23	27	3.4%	2.6%
Lithuania	-	25	18	18	24	26	2.8%	1.5%
Luxembourg	3	-	-	-	3	3	-	0.0%
Hungary		53	46	-	42	42	-0.8%	-0.3%
Netherlands	22	-	-	-	25	27	-	1.5%
Austria	-	-	-	-	29	30	-	0.5%
Poland		91	71	63	67	66	-0.5%	-0.1%
Portugal	-	28	-	-	25	25	-	0.4%
Slovenia	-	9	8	7	7	8	-1.2%	2.7%
Slovak Republic	-	42	-	-	30	27	-	-2.0%
Finland	29	29	26	22	22	22	-1.8%	0.5%
Sweden	15	12	-	-	12	12	-	0.4%
United Kingdom	438	-	-	-	480	491	-	0.4%
Norway	10	11	10	-	11	12	1.2%	0.5%
Switzerland	4	-	-	-	-	-	-	-
EU-23	-	-	-	-	1,546	1,595	-	0.6%
27 Networks	-	-	-	-	1,557	1,607	-	0.6%

Source: Eurostat and own estimates Note: data for Bulgaria and Romania not available; data for EU23 and EU27 Networks from 1990 to 2004 is missing as a result of gaps in the data available for some networks

- 4.28 As is the case for electrical energy consumption, it is very difficult to identify clear trends in diesel consumption. The demand for traction fuel depends on the progressive electrification of lines but also on the availability of fuel supplies and with it, the ease

of access to diesel fuelling facilities. National legislation, particularly in the field of energy, is also an issue in this context. In Germany, for example, it is not possible, for environmental reasons, to fuel a diesel-powered tractive unit outside a certified facility. All railway undertakings must thus fuel their tractive units in a DB facility or in the facility of another infrastructure manager/operator (who are also obliged to provide access to other operators); alternatively they must use their own facilities which are very expensive to build and operate. Such conditions may affect the decision to use diesel tractive units and, hence, the evolution of diesel fuel consumption.

Services in passenger stations

- 4.29 Data on railway (passenger) stations is available for only 10 countries, with only four of those countries providing a time-series showing their evolution over a decade. The classification of stations is furthermore not harmonised. We deal for example with three station types in Belgium, four station types in Italy categorised according to size, six station types in Germany categorised according to their function, and thirteen categories in France differentiating by type of line and traffic level. The lack of (comparable) data does not enable the robust identification of trends for services in passenger stations.
- 4.30 We have observed in the past the downgrading of stations with regard to ticket sales, luggage depositories and luggage transport services, as a result of staff reductions to reduce costs and improve productivity. Smaller railway stations are more affected than larger ones by this scaling down of services. This process is most likely completed in EU-15 countries, but is continuing in EU-8 countries.
- 4.31 As we do not have detailed information, we have used transport volume (the number of passengers) as an indicator for the development of the demand for services in passenger stations (see Table 4.2 above). Our forecast is based on the assumption that the evolution of the demand for services in passenger stations is similar to the development of the number of railway passengers, or of passenger transport performance (pkm), assuming that average travel distance does not change significantly. We expect the more important categories of stations to expand their offers of services accordingly. In parallel, the range of commercial services (shopping etc) available at these stations will also be enhanced in response to market growth.
- 4.32 As there are only few parties that are new entrants into the passenger market, there is little experience regarding access to information systems at stations, timetabling etc. But the future development of the demand for services in passenger stations will also depend on the liberalisation process in the rail passenger market.

Services in freight terminals

- 4.33 The following trends have been considered in forecasting the evolution in the demand for rail-related services in freight terminals:
- Growth in total goods transport performance (all modes combined) to continue to be higher than GDP growth;
 - Share of rail transport has decreased in the past, but is now stabilising in EU-15 countries; and
 - Strong (double digit) growth in the combined transport market.
- 4.34 These trends are very important for our analysis as they translate into the following generic tendencies:
- Continuing increase in demand for services in freight terminals;
 - Lack of adequate spare capacity in some major terminals; and
 - Terminals with less commercial importance due to location, scale or facilities continuing to have some spare capacity.
- 4.35 Information on terminals (inventories and/or transshipment and storage capacity / demand) is only available for selected terminals in some countries. For example there is likely to be a substantial increase in demand in individual Belgian terminals of between 20% and 200%, and a smaller but still significant increase in demand for terminal access and services in certain Italian facilities.
- 4.36 Looking at transshipment volumes as set out in the report prepared for the UIC “Study on infrastructure capacity reserves for combined transport by 2015” (see below), it can be seen that there will be a substantial increase in the demand for transshipment: coupled with the specific national examples that we have provided above, this indicates a tendency for substantial growth in the demand for access to and services in freight terminals.
- 4.37 These transshipment figures are included in Table 4.11 below. Furthermore the Table, and the study on which it is based, provides clear evidence that the expected growth in transshipment will result in a shortfall in the capacity available for use by incumbent rail operators and new entrants in key terminal locations. The scale of the capacity gaps expected is also shown in the Table below.

TABLE 4.11 CHANGE IN TRANSHIPMENT VOLUME AND CAPACITY GAP

Country	Transport area	Change 2002-2015		Rate of employment	Prob. capacity gap 2015 (1000 loading units)
		International	Total		
BE	Antwerpen	32%	72%	65%	-
BE	Genk	68%	159%	123%	52
BE	Zeebrugge	55%	155%	84%	14
CZ	Praha	0%	94%	144%	128
DK	Taulov	9%	73%	108%	34
DE	Bremen / Bremerhaven	39%	50%	77%	-
DE	Duisburg	8%	54%	52%	-
DE	Hamburg	36%	43%	102%	262
DE	Koeln	30%	95%	172%	277
DE	Lübeck	38%	138%	72%	-
DE	München	49%	42%	88%	27
DE	Neuss	9%	94%	104%	34
DE	Nürnberg	38%	64%	61%	-
DE	Mannheim / Ludwigshafen	39%	70%	128%	166
ES	Barcelona	89%	88%	88%	29
ES	Madrid	100%	40%	73%	-
ES	Valencia	66%	113%	122%	99
FR	le Havre	32%	17%	326%	-
FR	Paris	44%	54%	41%	-
IT	Bologna	40%	66%	66%	-
IT	Milano	58%	132%	107%	284
IT	Novara	62%	162%	59%	-
IT	Verona	47%	146%	71%	-
HU	Budapest	-12%	88%	88%	23
NL	Rotterdam	22%	92%	71%	-
AT	Graz	112%	174%	105%	33
AT	Villach	57%	136%	110%	33
AT	Wels	14%	76%	137%	75
AT	Wien	19%	85%	94%	42
PL	Gliwice	-10%	90%	178%	31
PL	Poznan	-2%	96%	82%	1
PL	Warszawa	-3%	98%	132%	31
SI	Ljubljana	-40%	49%	58%	-
CH	Basel	-6%	53%	61%	-
Total for all Europe		38%	82%	84%	1,676

Source: IWW, Kombiconsult, Kessel&Partner: Study on Infrastructure Capacity Reserves for combined transport, prepared for the International Union of Railways (UIC), Final report, Freiburg/Frankfurt am Main/Paris, May 2004

Access to and services in marshalling yards

4.38 The demand for services in marshalling and shunting yards is related to the

development of the single wagonload market (as part of the total rail freight market). We expect the following general trends to drive the demand for such services:

- Restructuring of wagonload transport, e.g. by DB (MORA C, Project 200x) and SBB (Project Fokus), will result in a decline in the total number of marshalling yards used, and therefore lead to a concentration on major hubs;
- A continuing decline in the underlying demand for single wagon load transport. This is in comparison with the continuing growth in the demand for the transportation of heavy, high-volume products (e.g. coal, construction materials) in lower-cost block trains, as well as the growing demand for combined transport in trainloads from major transport hubs such as seaports (particularly for continental and maritime unaccompanied combined transport); and
- A continuing decline in the number of private sidings.

4.39 Stakeholders were asked about the prospects for the demand for services in marshalling and shunting yards, which we defined in terms of wagons handled per year. Data on the use of individual marshalling and shunting yards would be the best information to analyse single wagon traffic, and to discuss potential developments.

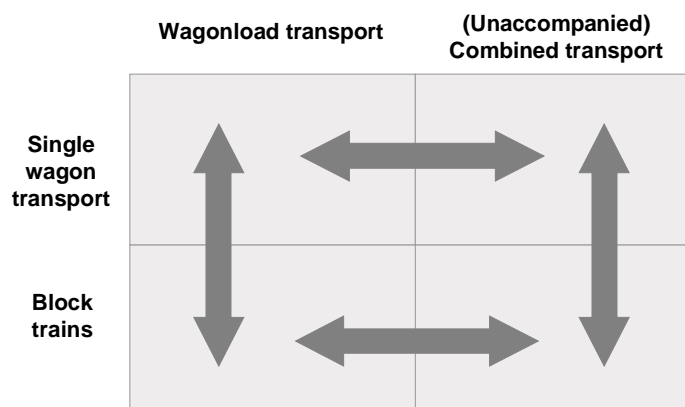
4.40 As we only received information for marshalling yards in Hungary, we gathered statistical information through desk research from the railway undertakings and infrastructure managers (annual reports, statistical vademecums etc.). The data collection turned out to be difficult for several reasons which make the analysis of the single wagon traffic, and therefore for the demand in marshalling and shunting yards, a complicated task:

- data is generally not available for single wagon traffic only
- there are problems in separating out wagon load transport by type of production, (full train loads/block trains, part-trains, single wagon traffic);
- As an example, groups of wagons are sometimes combined and operated as full train loads;
- There are problems in separating out single wagon loads and individual unaccompanied combined transport consignments (containers in intermodal transport), transported in multi-client and/or mixed block trains on some networks;
- The role of the multiple parties involved in producing combined transport is not always clear. For example, railway undertakings not only offer traction for combined transport trains sponsored by 3rd Party operators specialising in intermodal transport, but also offer their “own” products, or products in cooperation with other companies in combined transport.

4.41 The liberalisation of the rail freight market resulted not only in the market entry of new railway undertakings, but also in the establishment of subsidiary companies of incumbent RUs in other Member States. This resulted in competition between the RUs, and consequently in the restructuring of the rail freight market which is still ongoing (for example Railion is restructuring its single wagon offer through Project 200x, and SNCF is also rationalising its traffic production system to reduce its cost

base and respond to competition. When analysing the demand for services in marshalling and shunting yards, only single wagonload traffic market segment is strictly of interest but, as stated above, it is difficult to assess the transport performance of this segment in isolation. The following figure describes the overlaps between rail freight market segments.

FIGURE 4.1 THE OVERLAPPING OF MARKET SEGMENTS



Source: ProgTrans

4.42 Regulation (EC) 91/2003 lays down the railway statistics to be gathered by the Member States. As specified in the Annex A of this Regulation, the reporting of transport performance by the type of consignment (“may be broken down as follows: full train loads, full wagon loads and other”) is optional. The reported data by country is – as expected – poor. However, the result of the data analysis is as follows:

- In Germany, the market share of full train loads reached about 60% in 2004.
- In Ireland, the market share of full train loads is almost 80% in 2005; the same situation as in Italy in 2004.
- In Poland, the market share of full train load services increased from 62% in 2004 to 65% in 2005.
- In Slovenia: the market share of full train loads increased from 42% in 2004 to 49% in 2005.
- In Sweden: the market share of full trains load increased from 42% in 2000 up to 52% in 2005.
- However, in Slovakia, the market share of full trains load decreased by 2 percentage points from 2004 to 2005 (to reach 62%).

4.43 As a conclusion, we expect an overall decline in the demand for services in marshalling yards due to the fact that the marshalling and shunting processes are complex and very expensive. New entrants and some incumbent operators will concentrate on block trains as they are more profitable, and due to the requirements to obtain access to marshalling and shunting yards controlled by other stakeholders. The competition in the rail freight market has resulted, and will result, in continuing

restructuring of the rail freight market, particularly in respect of single wagon traffic offers. We also expect an increase in intermodal rail-road transport due to the promotion of the harmonisation and standardisation of intermodal loading units, but also due to the underlying continuous growth in intercontinental trade flows, transported in containers.

- 4.44 However, the data series reported to Eurostat are not adequate (e.g. the type of consignment is not defined) to enable us to undertake an in-depth analysis and provide forecasts of the transport performance of single wagon traffic; and hence forecast the demand for services in marshalling and shunting yards.

Train formation services

- 4.45 Due to the fact that the passenger market has not developed fully in a large number of networks, and that new entrants only exist in a small number of markets, there is very little information about the demand for train formation services. This is reinforced by the fact that in the market with the highest number of passenger operators, Great Britain, the rolling stock used comprises - in the majority of cases – fixed-formation multiple units, with the result that there is very limited demand for train formation services. The table below sets out the predicted changes in demand.

TABLE 4.12 AVERAGE CHANGE RATE P.A. IN DEMAND FOR TRAIN FORMATION SERVICES

Country	Yearly variance 2004-2010 (% p.a.)	Yearly variance 2000-2010 (% p.a.)	Yearly variance 2010-2015 (% p.a.)
Belgium	-1.7%	-0.8%	0.5%
Czech Republic	0.0%	1.0%	0.3%
Denmark	-1.4%	1.1%	0.5%
Germany	0.9%	0.1%	1.0%
Estonia	-2.2%	-3.6%	4.1%
Greece	2.8%	-	1.2%
Spain	2.6%	2.2%	1.6%
France	2.2%	2.0%	0.7%
Ireland	0.8%	1.9%	1.0%
Italy	-1.9%	0.6%	-0.3%
Latvia	4.7%	0.8%	2.4%
Lithuania	6.8%	1.1%	0.0%
Luxembourg	0.7%	-	0.0%
Hungary	-2.4%	0.4%	-0.4%
Netherlands	3.0%	0.0%	1.4%
Austria	1.5%	0.5%	0.5%
Poland	0.0%	-1.9%	-0.7%
Portugal	3.0%	-2.2%	0.2%

Slovenia	2.7%	2.4%	2.6%
Slovak Republic	3.3%	0.7%	-0.9%
Finland	4.4%	3.8%	0.6%
Sweden	2.1%	-	0.3%
United Kingdom	-0.9%	-	0.4%
Norway	1.6%	3.3%	0.5%
Switzerland	1.7%	1.6%	1.6%
EU-23	0.7%	-	0.6%
27 Networks	0.8%	-	0.7%

Source: Eurostat and own estimates Note: data for Bulgaria and Romania not available; yearly variance 2000-2010 for EU23 Networks is missing as a result of gaps in the data available for some networks

Storage sidings

- 4.46 There is no detailed information available on the number and capacity of storage sidings (or of other rail tracks and rail facilities that can be used to store rolling stock for short and longer-term periods.) As a result, it is not possible to provide forecasts of the future demand for such services.

Rolling stock maintenance services

- 4.47 The number of rolling stock units in use, and the traffic performance (as measured in train-km) of the rolling stock fleet, are indicators of the likely future development of the demand of maintenance, technical inspection services and rolling stock cleaning and repair services.
- 4.48 The analysis we have undertaken for this study focuses both on heavy and light maintenance. In recent years, a significant amount of railway rolling stock has been scrapped or sold outside the European Union, as a consequence of the procurement of new and higher-productivity rolling stock including the development of networks of high-speed passenger services using specialised rolling stock, as well as reflecting the continuing decrease in traffic levels in some segments of the rail market (for example single wagon-load traffic, as mentioned above.) In particular, statistics of locomotives that are mainly used for freight transport, as well as rail cars, show that fleet sizes have reduced in recent years.
- 4.49 However a reduction in the absolute size of the rolling stock fleet does not necessarily imply a proportionate decrease in the overall demand for the related services of heavy and light maintenance. As mentioned earlier and subsequently, improved productivity may lead to increased maintenance requirements within the smaller fleets of rolling stock now used more intensively. And continuing market liberalisation may enable some smaller operators to enter rail transport market segments at lower cost, using

second-hand tractive units and rolling stock with higher maintenance requirements, if such stock is made available.

TABLE 4.13 DEVELOPMENT OF THE LOCOMOTIVE STOCK

Country / Year	Locomotives (number)							
	1990	1995	2000	2001	2002	2003	2004	2005
Belgium	1,040	977	969	965	914	762	770	-
Czech Republic	-	2,968	2,829	2,639	2,476	2,478	2,456	-
Denmark	376	315	215	187	182	184	177	-
Germany	-	8,985	7,054	6,127	5,949	-	-	-
Estonia	-	143	119	119	173	178	121	-
Greece	233	234	157	156	155	153	157	-
Spain	1,287	1,081	899	884	860	834	821	-
France	5,654	5,295	4,983	4,987	4,983	4,836	4,670	4,372
Ireland	126	114	107	107	104	97	-	94
Italy	-	3,268	3,270	-	3,444	-	-	-
Latvia	484	349	248	232	229	229	217	-
Lithuania	-	329	278	265	254	254	251	249
Luxembourg	80	76	94	92	88	102	93	96
Hungary	1,617	1,352	1,107	1,100	1,061	1,059	1,029	-
Netherlands	522	526	305	-	267	279	225	-
Austria	1,232	1,333	1,280	1,287	1,316	1,370	-	-
Poland	4,076	6,094	4,027	4,040	4,179	4,275	4,396	-
Portugal	320	275	229	221	198	189	171	-
Slovenia	236	214	186	184	180	163	162	150
Slovak Republic	-	1,322	1,209	1,167	1,131	1,116	1,072	-
Finland	682	663	622	630	629	630	631	-
Sweden	-	740	691	674	663	664	678	-
United Kingdom	2,242	-	997	1,005	1,014	1,017	-	-
Norway	326	235	172	172	-	-	-	-
Switzerland	1,435	1,454	-	-	-	-	-	-
Bulgaria	-	876	-	673	602	597	585	580
Romania	-	4,370	3,448	3,318	3,260	3,188	-	-
EU-23	20,207	36,653	31,875	27,068	30,449	20,869	18,097	-
27 Networks	21,968	43,588	35,495	31,231	34,311	24,654	18,682	-

Source: Questionnaires, Eurostat, EC, UIC, national statistics Note: data not available for some networks; data for EU23 and EU27 Networks for 2005 is missing as a result of gaps in the data available for some networks

- 4.50 In most countries, the number of railcars almost exclusively used in passenger transport has increased in recent years (see the table below).

TABLE 4.14 DEVELOPMENT OF THE RAILCAR STOCK

Country / Year	Railcars (number)							
	1990	1995	2000	2001	2002	2003	2004	2005
Belgium	687	597	701	741	764	760	759	-
Czech Republic	-	960	973	970	968	977	985	-
Denmark	546	-	414	485	531	-	-	-
Germany	2,170	2,774	6,946	-	-	-	-	-
Estonia		80	77	75	63	63	57	-
Greece	168	196	90	90	88	89	112	-
Spain	785	762	794	806	804	806	826	-
France	1,768	1,921	2,175	2,253	2,358	2,404	2,479	2,576
Ireland	40	57	117	117	-	-	-	-
Italy	-	1,443	1,445		1,595	-	-	-
Latvia	265	246	181	167	159	159	159	-
Lithuania	-	70	63	63	61	60	62	62
Luxembourg	19	34	37	40	39	39	42	48
Hungary	282	287	339	342	343	363	370	-
Netherlands	722	-	1,845	1,866	1,883	1,922	1,969	1,957
Austria	321	520	496	482	464	442	-	-
Poland	1,407	1,372	1,266	1,246	1,207	1,204	1,207	-
Portugal	228	318	351	332	306	296	294	-
Slovenia	122	113	114	120	130	114	114	117
Slovak Republic	-	373	361	344	320	315	329	249
Finland	100	100	112	112	119	119	129	147
Sweden	-	-	363	451	519	529	514	-
United Kingdom	4,316	-	-	8,279	8,279	3,282	3,309	3,089
Norway	160	145	172	172	-	-	-	-
Switzerland	252	245	-	-	-	-	-	-
Bulgaria	-	-	-	-	-	-	-	-
Romania	-	-	-	-	-	-	-	-
EU-23	13,946	12,223	19,260	19,381	21,000	13,943	13,716	-
27 Networks	14,358	12,613	19,432	19,553	21,000	13,943	13,716	-

Source: Questionnaires, Eurostat, EC, UIC, national statistics Note: data for Bulgaria and Romania not available; some data not available for other networks; data for EU23 and EU27 Networks are the same from 2002 onward, as figures from for Norway,

Switzerland, Bulgaria and Romania were not available; data for EU23 and EU27 Networks for 2005 is missing as a result of gaps in the data available for some networks

- 4.51 As shown in the market performance section above, we expect passenger and freight transport activities to increase in terms of traffic performance during the study period, but with lower growth rates than are exhibited by transport performance (as measured in tkm and pkm) due to a continuing increase in the efficiency of rail transport: this is reflected in an increase in occupancy (average number of passengers per train) and the average load (tonnes per freight train).
- 4.52 Stakeholders have pointed out that rolling stock now needs substantially less heavy maintenance than in the past, and marginally less light maintenance; however, as mentioned earlier variations in the intensity of use will, however, also affect the total demand for maintenance. As new entrants use predominantly leased (new) rolling stock, the average age of the rolling stock fleet is likely to drop further. Therefore, we expect demand for maintenance and repair services not to increase in overall terms, and in some cases to decrease. The capacity thereby released should speed up the market opening process for maintenance facilities. In Switzerland for example, an excess supply already exists. On the other hand, the demand for inspection services is likely to increase with the projected increase in traffic performance, as will the demand for cleaning services as national bodies require higher standard of quality in the provision of passenger services.
- 4.53 With reference to the drivers of the demand for cleaning services, the following table shows the development of the stock of railcar trailers and coaches, since train cleaning services are of importance mainly for passenger transport.

TABLE 4.15 DEVELOPMENT OF STOCK OF RAILCAR TRAILERS AND COACHES

Country / Year	Railcar trailers and coaches (number)							
	1990	1995	2000	2001	2002	2003	2004	2005
Belgium	3,271	3,136	3,501	3,479	3,413	3,358	3,292	3,251
Czech Republic	-	5,996	5,284	5,259	5,149	5,121	5,019	-
Denmark	1,533	-	1,603	1,742	1,937	-	-	-
Germany	14,128	17,950	21,097	20,864	21,723	20,992	-	-
Estonia	-	504	241	308	203	251	243	-
Greece	810	869	503	504	503	457	514	-
Spain	3,907	4,273	3,701	3,654	3,742		3,843	-
France	15,798	15,799	15,694	15,653	15,685	15,553	15,627	15,879
Ireland	333	331	421	421	419	405	-	-
Italy	14,025	13,451	11,935	-	11,007	-	-	-
Latvia	1,137	1,066	701	622	598	580	537	-
Lithuania	-	696	563	537	509	480	471	467
Luxembourg	116	112	112	112	112	112	-	-
Hungary	4,454	3,754	3,191	3,226	3,087	3,093	3,060	-
Netherlands	2,622	2,611	2,742	-	2,832	2,758	2,802	-
Austria	3,689	3,740	3,468	3,332	3,320	3,175	-	-
Poland	8,683	11,377	9,761	9,544	8,985	8,877	8,603	7,725
Portugal	1,033	1,380	1,417	1,313	1,249	1,221	1,168	
Slovenia	728	513	461	470	482	432	403	423
Slovak Republic	-	2,638	2,273	1,915	2,229	1,984	1,797	1,759
Finland	965	953	1,002	1,011	1,030	1,060	1,029	1,084
Sweden	1,698	1,633	1,174	1,847	1,885	1,884	-	-
United Kingdom	12,564	-	2,217	10,425	16,981	16,982	-	10,872
Norway	905	897	918	942	930	-	-	-
Switzerland	4,124	3,879	3,333	3,925	4,020	4,076	-	-
Bulgaria	-	2,190	-	1,874	1,655	1,705	1,749	1,217
Romania	-	6,666	6,429	6,474	6,019	5,560	-	-
EU-23	91,494	92,782	93,062	86,238	107,080	88,775	48,408	41,460
27 Networks	96,523	106,414	103,742	99,453	119,704	100,116	50,157	42,677

Source: Questionnaires, Eurostat, EC, UIC, national statistics Note: data not available for some networks; data from 2003 onwards is lower as a result of gaps in the data available for some networks

- 4.54 In most of the countries reviewed, the stock of rail passenger vehicles has decreased over the past decade, and we expect that this trend will continue in future years. On the other hand, the trend in traffic performance (measured in train-km) in passenger

transport continues to show a slight increase. Therefore, in aggregate, we expect a slight increase in the demand for cleaning services.

Back-up services

- 4.55 The reliability of locomotives was assessed in the interviews with rail operating companies. As not all RUs answered the relevant questions, we only have a limited insight into the size and value of back-up services. The reliability of locomotives used by new entrants is generally considered to be higher, and we also note that modernisation of rolling stock fleets will impact positively on reliability; however, there are no robust statistics on the reliability performance of the present fleets.
- 4.56 Assuming that the average age of locomotives continues to reduce, and given the trend to procure locomotives with lower maintenance requirements, we expect that the demand for back-up services will not increase, even if the traffic performance of rolling stock increases slightly over the next 10 years. But if incumbent operators sell off, rather than scrap, their obsolescent or surplus vehicles, some new entrants may use second-hand rolling stock on certain networks, leading to more breakdowns and an increase in the demand for back-up services.

Locomotive pushing services

- 4.57 With reference to locomotive pushing services, the expected increase in traffic performance on the Alpine routes in the coming years should result in an increase in the demand for these services in the short term. However, longer-term projects to construct less steeply-graded base-tunnels on key Alpine routes are likely to reduce the longer-term demand for these services. This decline may be evident by 2015.
- 4.58 The demand for locomotive pushing services may increase if new entrants are permitted to utilise these services on networks where each operator is currently obliged to take full responsibility for the provision of traction. New entrants in Switzerland, for example, use two locomotives (double-traction) to operate on mountain routes to comply with relevant train performance parameters. However, this increases their total operating costs compared to the localised use of pushing services.

Services in border stations

- 4.59 We were not able to gather any quantitative information regarding the level of demand for services at border stations within the European Union. Hence, it is not possible to provide numerical forecasts for the level of demand for such services. However, statistical information from Eurostat for a number of countries indicates that between 2003 and 2005, international rail transport increased in almost all countries. Due to the economic integration of the European Union, and the development of the European

Railway Area, international rail transport is expected to continue to increase faster than total rail transport. Therefore, border-crossing traffic is expected to increase, albeit at a rate that is less than the growth in the demand for rail transport, given the trend towards higher average train loadings. However, the progressive introduction of interoperability initiatives, for example by the use of multi-system locomotives, will reduce the importance of some services provided at border-crossings. To date, the majority of new operators, especially on the alpine routes, have acquired dual voltage rolling stock and as a result do not need to stop at border crossings to change locomotives: this is a practice that is likely to increase and have an effect on the demand for such border services.

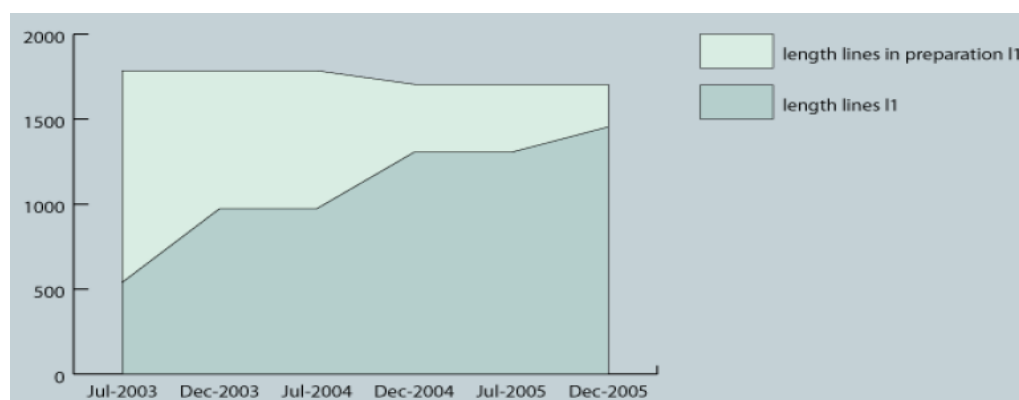
Driver training services

- 4.60 We have identified that in some networks there is already a shortfall in the number of drivers and a correspondingly high level of demand for new drivers, resulting from the increase in rail traffic and services in both passenger and freight market segments. This is likely to lead to a substantial increase in the demand for driver-training services during the study period, especially as more operators enter the rail passenger and freight markets, and need to employ trained drivers to operate their services.

On-board train protection systems

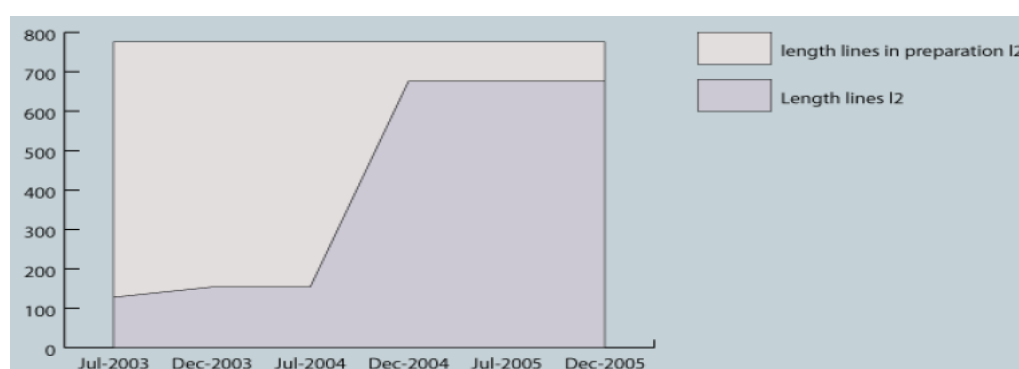
- 4.61 As regards the provision of on-board train protection systems there are two aspects which have to be taken into consideration:
- The equipment installed on railway infrastructure; and
 - The associated equipment installed on rolling stock to operate train control and signalling systems.
 - The basic components of ERTMS are the European Train Control System (ETCS) and GSM-R. The following figures show the deployment of ERTMS/ETCS on railway lines. They show the length of rail lines equipped with ERTMS/ETCS level 1 and level 2. At present Eurostat does not provide statistics on the signalling and train control systems of the railway infrastructure in each country.

FIGURE 4.2 RAILWAY LINES EQUIPPED WITH ERTMS/ETCS LEVEL 1



Source: UNIFE

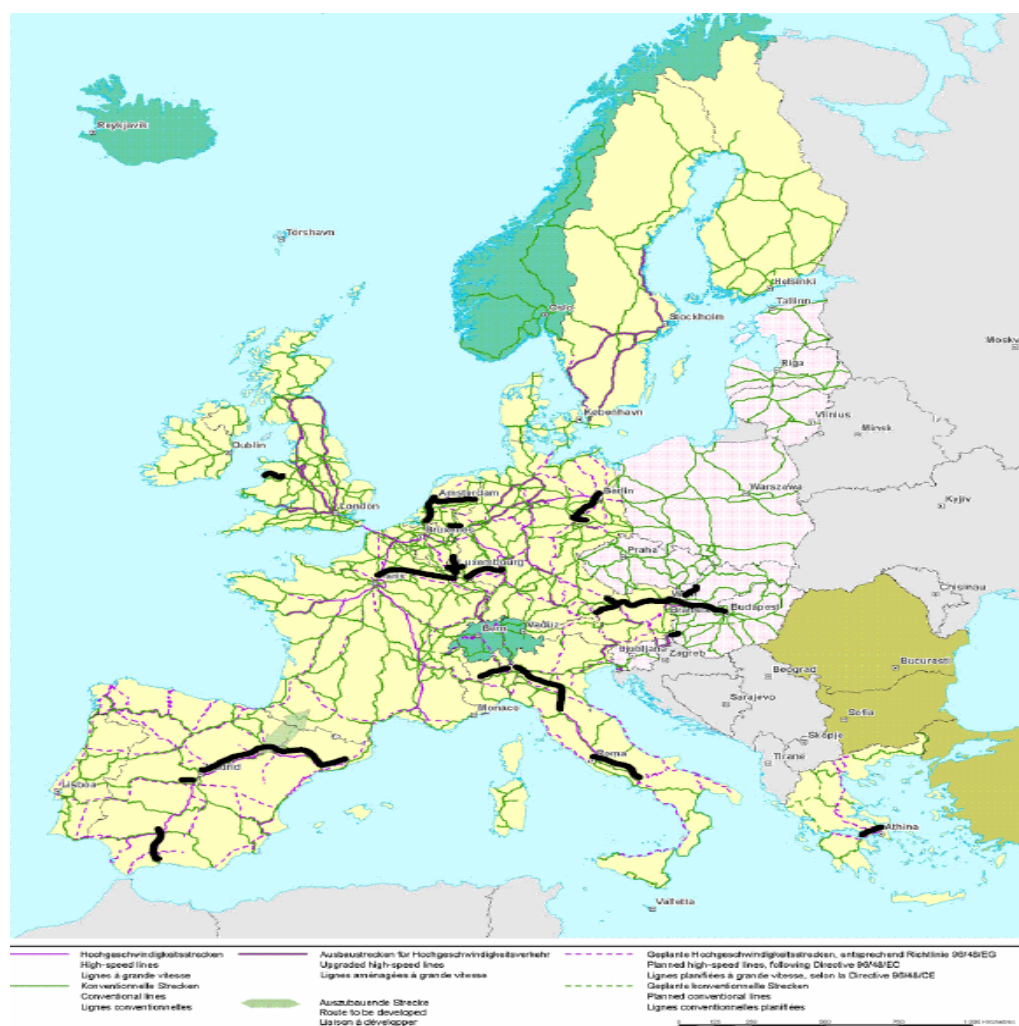
FIGURE 4.3 RAILWAY LINES EQUIPPED WITH ERTMS/ETCS LEVEL 2



Source: UNIFE

- 4.62 The figure below gives an overview of the lines for which commercial use of ETCS is currently planned before the end of 2008.

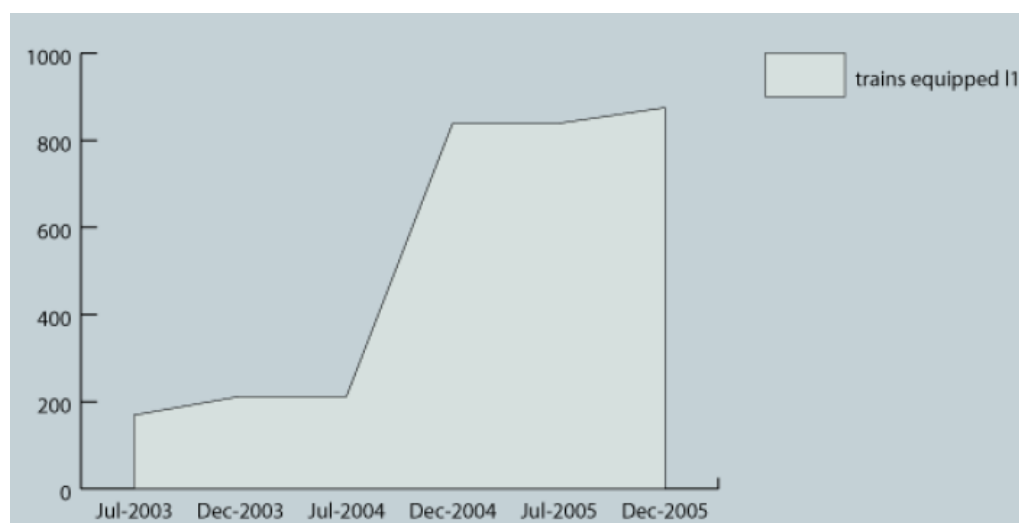
FIGURE 4.4 LINES FOR WHICH COMMERCIAL USE OF ETCS IS PLANNED BEFORE THE END OF 2008 IN EU-25 (STATUS MAY 2005)



Source: European Commission

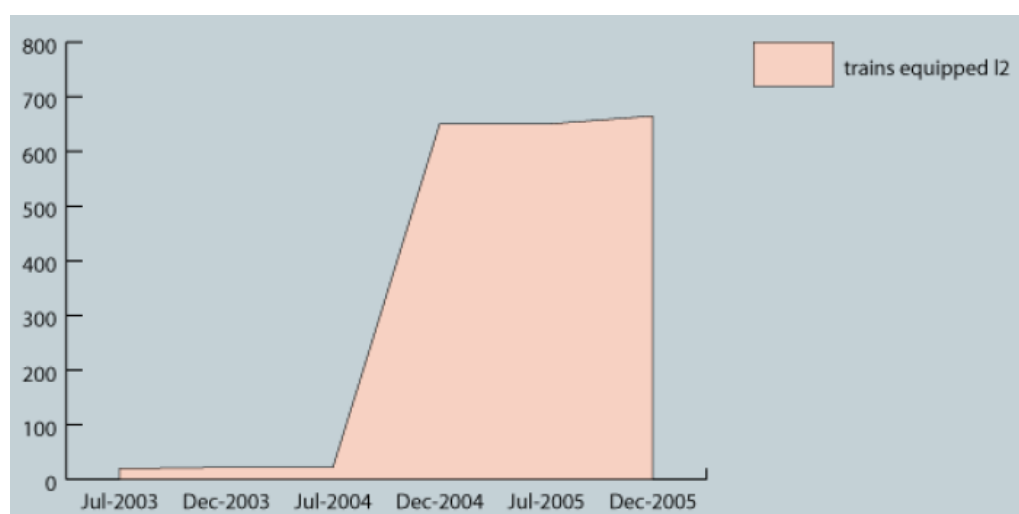
- 4.63 The development of the demand for the provision of on-board train protection systems will be determined by the number of rolling stock units to be equipped, the use of multi-system locomotives, and the extension of the network equipped with ERTMS/ETCS. In most countries reviewed, the total stock of locomotives has decreased in recent years; however no statistics on the homologation of new rolling stock are currently available. Since multi-system locomotives are very capital intensive, we do not expect their widespread use, and hence we do not envisage the use of such locomotives to impact significantly on the demand for on-board train protection systems. The rate of deployment of on-board train protection systems is the third key element. Figures 4.2-4.4 provided information on the installation of ERTMS/ETCS equipment on railway lines in Europe. The following figures 4.5 and 4.6 complement this, by showing the number of trains in the EU equipped with the two levels of the system.

FIGURE 4.5 TRAINS EQUIPPED WITH ERTMS/ETCS LEVEL 1



Source: UNIFE

FIGURE 4.6 TRAINS EQUIPPED WITH ERTMS/ETCS LEVEL 2



Source: UNIFE

Telematics services for freight operations

- 4.64 Commission Regulation 62/2006 lays down the Technical Specification for Interoperability relating to Telematic applications for freight subsystems (TSI TAF).⁵ As specified in the TSI “a TSI on telematics should not demand the use of specific technologies or technical solutions except where this is strictly necessary for the

⁵ Commission Regulation (EC) No 62/2006 of 23 December 2005 concerning the technical specification for interoperability relating to the telematic applications for freight subsystem of the trans-European conventional rail system.

interoperability of the trans-European conventional rail system“. The Strategic European Deployment Plan (SEDP) Project has been formed to create and document the deployment plan for the implementation of the requirements of the TAF TSI including the underlying systems and the supporting messaging infrastructure.

- 4.65 Technologies such as the Global Navigation Satellite System (GNSS) are developing further. Effective tracking and tracing will be possible with the satellite radio navigation system.⁶ Europe's contribution to GNSS GALILEO should be operational by 2008.
- 4.66 Although a number of railway undertakings have requested the development of telematic applications adapted to rail transport uses, the supply of services is not yet satisfactory. It is expected that the demand for telematics services for freight operations will increase at a much faster rate than the underlying growth in transport performance. In particular, the demand for international integrated systems will increase as almost half of the total transport (measured in tonnes-kilometres) is cross-border transport in the European Union.

Computer reservation services for passenger transport

- 4.67 The forecast increase in the number of rail passengers may provide an indication of the development of the demand for computer reservation services in rail passenger transport. In the European Union, passenger volumes are expected to increase by about 10% from 2000 to 2010, and by about 15% to 2015 respectively. In practice, however, there is likely to be very little increase in the demand for computer reservation services from incumbent operators with existing systems. The majority of the increase in demand will originate from new entrants, who are unlikely to emerge in significant numbers until the implementation of the liberalisation of the international and domestic rail passenger markets, since computer reservation services are mainly of interest in long-distance passenger transport. Therefore, until 2010, demand is likely to remain at about its current levels, while there may be an increase between 2010 and 2015.

Leasing of rolling stock

- 4.68 There already exists a market for the leasing of locomotives and rail freight wagons in most countries. Leasing of passenger rolling stock is not yet common in most of the countries reviewed, as the liberalisation of the rail passenger market is not yet implemented; however, there has been some significant development, notably in Germany and Great Britain. The following table shows a sample of the companies

⁶ Rail applications include not only tracking of vehicles (and fleet management) or consignments transported but also for train control (ERTMS), passenger information, energy optimisation, track survey etc.

active in the market of leasing and rental of rolling stock.

TABLE 4.16 LEASING OF ROLLING STOCK BY COMPANY

Company	Locomotives	of which diesel	of which electric	passenger rolling stock	Of which electric
Angel Trains	499	419	80	2174	1477
HSBC Rail	108	24	84	3659	2504
Poterbrook	186	92	94	3739	881
CB Rail	32	24	8	103	17 ²
Mitsui Rail Capital Europe B.V.	33	-	33	-	-
Dispolok GmbH ¹	120 ³	-	-	-	-
Rent-a-rail Eisenbahn-Service AG	20	-	-	-	-
MGV Service BmbH & Co. KG	2	-	2	-	-

Source: Consortium analysis 2006 Notes: data not available for some companies; (1) Siemens Dispolok GmbH was sold to Mitsui Railway Capital Europe B.V. in September 2006; (2) Ordered; (3) Mostly electric locomotives

- 4.69 Most requests for locomotive leasing and rental services currently originate from new entrant operators, as incumbent rail operators have not made second hand rolling stock available. The question arises as to whether private operators have an intrinsic propensity to lease rolling stock rather than purchasing it, and whether or not large operators will continue to have different preferences than smaller ones. Operational leasing to overcome capacity shortages, or to provide capacity for operational build-up is the form that is often sought by small operators; however, it may also be used by larger operators to meet specific requirements and to enter discrete new markets.
- 4.70 Over the study period, we expect that the demand for such services will increase at least in line with the increase in traffic performance in rail freight (measured in train-kms).

Leasing of staff in the freight sector

- 4.71 We were not able to obtain any numerical data on the current size or value of the market for staff leasing. However, we believe that the demand for such services will increase as the liberalisation process proceeds further, and as more new entrant rail operators begin services. Furthermore, we expect that the new entrant operators' share of total traffic performance (in train-kms) will increase if the underlying demand for the leasing of staff is appropriately met.

5. ACCESS CONDITION ANALYSIS AND INDUSTRY CONSULTATION

Introduction

5.1 To fully evaluate the current and future position of rail-related services, and to provide a complete picture of the access conditions, it is necessary to obtain a clear understanding of the views and experiences of key industry stakeholders, as well as collecting sufficient data to evaluate current market conditions in a meaningful way and to forecast the likely positions in 2010 and 2015. As a result, we committed ourselves to undertaking a comprehensive programme of industry consultation, so as to fully understand the positions of the parties involved. This chapter sets out our approach, and the results we obtained from the stakeholder interview process. The stakeholder analysis was divided into two distinct sections:

- Data collection for the forecasting workstream; and
- The interview of stakeholders to obtain their views on the demand and supply of rail-related services.

5.2 The focus of this chapter is

- Stakeholder interviews and opinions;
- Complaints that regulatory bodies have dealt with;
- A view on best practice in information provision; and
- Our case study on the availability of information on rail-related services.

Approach to the stakeholder analysis

5.3 Our approach in this stakeholder analysis has been to organise and undertake telephone interviews with the industry stakeholders in each network, supplemented by a number of face-to-face interviews.

5.4 A small number of stakeholders were reluctant to undertake interviews and requested that we send them written questions to which they could reply to in writing.

5.5 On the whole we have had a positive response to the stakeholder analysis, with substantial information being made available by the industry participants and thought provoking interviews being undertaken with many stakeholders.

Stakeholder list

5.6 To ensure that we obtained a comprehensive view from participants in the rail

industry, we approached the following stakeholder groups:

- Incumbent and new entrant railway undertakings;
- Infrastructure managers;
- Railway manufacturers;
- Freight wagon and rail car leasing companies;
- Competition authorities;
- Rail safety authorities;
- Rail regulatory bodies;
- Operators of training facilities;
- Terminal operators;
- Operators of maintenance facilities; and
- Other providers of rail-related services.

5.7 Not all of these stakeholder groups are present in each of the 27 networks that we looked at. However where these groups have been active on a national scale, we have approached them. In a number of cases, we interviewed parties that operate across national borders; while we concentrated on obtaining their views on their domestic markets, we were also keen to understand how they perceived the markets in other networks, and more importantly, how these perceptions compared with their domestic experiences.

5.8 In addition to the stakeholder groups mentioned above, and the requirements of the project, we considered it was crucial to obtain the point of view of supranational industry bodies and associations with regards to the ways which rail-related services were being provided, and any market or safety implications relating to their provision. We had extremely useful discussions with the Community of European Railways, the European Rail Freight Association, the European Infrastructure Managers Association, the European Rail Freight Customers Platform and the European Rail Agency. This step was taken not only to gain an initial overview of the positions of stakeholders in the industry, but also to ensure that the questions that we were asking the specific stakeholder groups listed above were appropriate, and addressed the key issues impacting on the supply of, and demand for, rail-related services.

5.9 We held over 75 interviews in total with the range of stakeholders across Member States. We have sought a balanced approach to the stakeholder analysis by incorporating not only the points of view of the new entrant operators, but also of the infrastructure managers and of the incumbent operating companies, as well as those of regulatory authorities. Only by undertaking such a wide range of interviews, are we able to correctly set out coherent and independent findings.

Note

- 5.10 We have been told by stakeholders in some Member States that they were unwilling to provide views on the situation in their domestic markets, as a result of the fear that their comments would be misinterpreted. This response was encountered in Estonia, Luxembourg, and Slovakia, although in each case some statistical information was provided. Since the interim report we have held further interviews and have received written answers to our questions from Deutsche Bahn.
- 5.11 Although we aimed to get a complete picture of the stakeholder positions in each network, there remain some networks, in addition to the networks named above, where we were not able to complete the stakeholder analysis. These networks are included in the table below.

TABLE 5.1 NETWORKS WITH INCOMPLETE STAKEHOLDER ANALYSIS

Country	Percentage of interviews undertaken
Romania	70%
Belgium	80%

- 5.12 It is important to note that in the case of the two networks mentioned above, it was the new entrants that were unwilling to make themselves available for an interview.

General industry comments

- 5.13 We mentioned above that the majority of the stakeholders were keen to take part in interviews in one form or another. It can be noted that the degree of openness of conversation is highly correlated to the actual and perceived level of liberalisation in the relevant domestic rail market. In general, the incumbent operators in more open markets were more willing to point out shortcomings in their domestic markets, and to point to potential problems in the competitiveness in the market.
- 5.14 In general, the perception of the market characteristics varies depending on the network considered, and the type of stakeholder interviewed. On one hand, northern Member States, such as the Scandinavian countries, provide more detailed explanations of the problems connected to the implementation of European Directive 2001/14/EC, possibly due to the fact that these networks have progressed further in the implementation of the Directive 2001/14/EC than have central or southern countries. On the other hand, incumbent stakeholders have generally accepted the current situation as satisfactory, whereas new entrant stakeholders point to the continuing existence of a number of problems on most networks: this difference in perception is consistent with that identified between incumbent and new entrant stakeholders in all industrial sectors subject to a liberalisation process, across the world.

- 5.15 A common theme recurring throughout the consultation process is that a number of structural (rather than service specific) problems still need to be resolved in some countries. However, a number of stakeholders recognise that many of the difficulties encountered are introductory or transitional problems, resulting from the fact that the opening of the rail market and competitive market entry are still relatively new processes; these stakeholders consider that the problems should be resolved as more experience is gained, and as the procedures and safeguards themselves are revised and developed to reflect lessons learned on a case-by-case basis.
- 5.16 The immaturity of the market entry process is also a reason for the limited number of complaints received to date regarding access to, or the conditions of supply of, rail-related services. In general, stakeholders do not expect this situation to last, and anticipate an increase in the volume of complaints and appeals as the rate of market entry increases. Having said that, respondents also emphasised that all stakeholders should remain vigilant to ensure that current, transitional problems and temporary barriers to access to rail-related services do not evolve into permanent structural barriers within the market.
- 5.17 Some consultees pointed out the natural monopoly elements of some of the services to be provided, such as those located at passenger stations. They argued that it might be more appropriate for such service provision to be the responsibility of the infrastructure manager or a similar neutral body, rather than being offered by an individual operator or a small group of operators acting in an imperfect market. The resultant monopoly provider would require regulation to ensure that it does not abuse its dominant position, and thus economic regulation would act as a proxy for competition. It was suggested that this approach could also be used for those services that cannot immediately be supplied in a contestable environment while there remains a dominant provider, and that regulatory intervention should then be slowly reduced as competition increases.
- 5.18 Furthermore, as was mentioned in the RAILIMPLEMENT project, other factors, such as the attitude of national governments towards the liberalisation process, have also been claimed to influence the way the Directive is implemented in practice, specifically in relation to the provision of rail-related services. For instance, one of the stakeholders states that in his country “the new government has a different view of competition and wants to retain a strong influence on the rail industry.” Furthermore, some point out that there is a lack of policy alignment and coordination between national Governments –even in adjacent countries. One stakeholder stated that it is crucial that “all countries are working towards the same timescales”.
- 5.19 Questions about the prospects of further liberalisation have drawn out important and insightful comments from incumbent operators: these consultees either express concern about their ability to adapt efficiently and profitably to new competitive challenges (in particular in Eastern European countries), or they explain why they consider that there is no scope for further progress in liberalisation. For instance, an incumbent in an Eastern European country states clearly that the only liberalisation

that is possible in his country is in “the market for rolling stock cleaning services and the supply of traction fuel”. Similarly, an incumbent in a Central European country says that as he already uses all terminal capacity in his country, new entrants will need to build their own facilities, which is not likely to happen given the upfront investment costs necessary.

- 5.20 A stakeholder in Latvia blames the monopolistic position of the rail infrastructure manager for the high access fees charged. In one case, lack of transparency has led to anticompetitive behaviour. The regulatory authority of a network explained a case of dumping in his country where the incumbent set prices for a service below the costs incurred, with the resultant losses preventing competition, a situation that is now changing thanks to government intervention.
- 5.21 Finally, it is also important to include here two opposing views on the impact on safety, of open access to rail-related services. According to one stakeholder, the opening of the market in related rail services can cause some challenges to safety performance, as “there is a fragmentation of services and, as a result, there is a splitting of responsibilities”. This “is making it harder to have a total overview of what is going on and is making it more difficult for the infrastructure manager”. Nevertheless, the safety authority operating in the same Member State of the stakeholder quoted above, asserts that there are no safety implications as a result of the opening of the market, since the regulations clearly define the allocation of responsibility for this subject.

Complaints in relation to each rail-related service

- 5.22 Given our aim to include a balanced view of the various stakeholder positions, it is necessary to ensure that significant problems or complaints are recorded and illustrated in order to identify any potential areas where further action is required. Accordingly, this section sets out the complaints and specific comments that we have received from stakeholders in relation to each of the services set out in Chapter 3. For each of the services, we provide the key comments that we have received and then identify the Member States where the problems have arisen. In some cases we were provided with specific examples of negative behaviour in specific locations. In order to protect the anonymity of individual stakeholders whilst demonstrating the generic relevance of the examples cited, we have disclosed sufficient detail to identify the location of the problem without revealing the identity of the entities involved.
- 5.23 It can be noted that some of the complaints that have been drawn to our attention relate specifically to the prices of certain rail-related services: we discuss the prices themselves in more detail later in this chapter.

Supply of traction energy (electricity and fuel)

- 5.24 The supply and prices of traction current has been seen as a problem in Germany in the past as a result of the cost of acquiring traction current from DB Energie. This has been the subject of a number of complaints in Germany that have been followed up by the regulatory authorities.
- 5.25 Clients from outside the DBAG group seeking to procure traction energy generally see the prices for energy as being too high. Their problems are exacerbated because the provision of diesel fuel from external sources is either impracticable or impossible (see paragraph 0), and temporary supply arrangements (mobile tanking units) are forbidden. The availability of diesel fuel is further limited by the fact that the network of fuelling points has been rationalised substantially in recent years. Furthermore, the fact that charges for the use of train paths in Germany incorporate a compulsory charge for the use of the electric catenary on a route, means that trains powered by diesel engines effectively pay for infrastructure facilities that they do not use. As a result of this fixed element of rail infrastructure charges, the use of diesel traction is disincentivised (which for environmental and social marginal cost reasons may be preferable).
- 5.26 The structure of charging for traction electricity adopted in Germany has been appealed by Rail4Chem (R4C), which considered that the structure did not provide a truly level playing field, since it included rebates that generally favoured large clients at the expense of new entrants.
- 5.27 While the use of 3rd party energy providers is possible in principle in Germany (of all the networks analysed, this possibility is available in Germany and France), it is generally impracticable for stakeholders to use external suppliers of traction electricity, as a result of the high distribution charges (similar to the problem of fuelling points), and the regenerative requirements imposed. In the case of the latter, all rolling stock that runs on the German network is required to have specific equipment that meters the usage of electricity and also provides for regenerative braking. A number of stakeholders have mentioned that this is a regulation that imposes a significant cost on their business in terms of the cost of the equipment and the time it takes to obtain and install it on the rolling stock. The stakeholders we spoke to indicated that although the regeneration requirement meets wider environmental objectives, its current structure represents a clear barrier to entry, and one that goes against the goal of increasing competition and openness fostered by the ability to use other electricity providers.
- 5.28 Furthermore, energy providers like E.ON do not wish to risk the good business relationship they have developed with one of their largest industrial customers DBAG, in order to support new entrants purchasing limited quantities of traction energy.

- 5.29 R4C won its appeal on an interim basis, and to avoid further litigation and in recognition of DBAG's need to meet the expectation of its clients regarding existing timetable planning procedures, the regulator offered to negotiate with DBAG with the result that the charging and supply arrangements for traction electricity are agreed for only one year until April 2007.
- 5.30 In September 2006, the Higher Regional Court of Frankfurt overturned the interim decision mentioned above, stating that in Germany there is no legal obligation that compels companies outside the DBAG Group to be treated equally to those inside the Group, and therefore holding that the Railion price advantage of 7-8% was acceptable.
- 5.31 Finally, following a further request by Rail4Chem, the Federal Supreme Court will look at this case.
- 5.32 The supply of diesel traction fuel through specific fuelling points is an issue that a number of stakeholders have identified as a problem, in addition to Germany as mentioned above, we have been told of similar problems in Hungary. Two operators also told us that in France, there are difficulties in obtaining access to the fuelling facilities provided by SNCF. Furthermore, the fuelling service itself is operated by SNCF and there are no clear guidelines on the timescales for fuelling and returning the vehicles to the operator; on a number of occasions, rolling stock refuelling took much longer than was expected, or considered to be reasonable. It should be noted that in some countries, such as Italy and Sweden, there are no such restrictions and operators are allowed to fuel their rolling stock from mobile tanking units.

Services in passenger stations

- 5.33 We have not been informed by stakeholders of any problems in relation to access to railway passenger stations and to the rail-related services in those stations. We have however learnt that Véoia Transport has had difficulties in Germany accessing automotive loading bays in stations for motorail services. This lack of complaints may reflect the fact that as the rail passenger market is not yet liberalised, there are only a small number of networks where stations are used by other operators than the incumbent.
- 5.34 In Germany, the Federal Network Agency has initiated a market study on the provision of services in passenger stations and on the pricing structure for access to stations.

Services in freight terminals

- 5.35 A number of stakeholders continue to experience problems in accessing freight terminals and in being able to use the services within the terminals. This problem has

arisen in Belgium, France, Germany, Hungary, Italy, Netherlands, Norway and Sweden. The problems or access to freight facilities are related both to capacity issues within terminals and to behavioural issues.

Capacity issues

- 5.36 Capacity constraints remain a key problem in accessing freight terminals, both in terms of the range of terminal facilities in strategic locations, as well as the internal capacity of the existing terminals. New operators have difficulties obtaining access as a result of the saturation of freight terminal facilities, and the terminal operators themselves are often unable to expand their level of supply because of the physical limitations of the site. While this is an important problem it is not one that leads to discrimination. According to the stakeholders we approached in Germany, Hungary, Netherlands, Norway and Sweden, limitations to capacity are the reasons that are generally given for refusing access to a potential operator wishing to access freight facilities. In the case of the first two of these networks, some stakeholders have mentioned that in the case of some freight terminal facilities, these capacity constraints are unfounded and are used to limit new entry.
- 5.37 In the case of Germany, some stakeholders have mentioned that the main problems affecting access to freight facilities arise in relation to inland port facilities. This seems to have been confirmed by the ruling of the Federal Networks Agency that forced an inland port operator to provide access to a new rail operator. This decision is currently being appealed, but in the meantime the seaport operator has adhered to the decision.

Behavioural issues

- 5.38 In addition to problems relating to constraints on terminal capacity, some stakeholders have mentioned that there are also problems with prioritisation within some of the terminals themselves, in that rail services operated by -or on behalf of- the facility operator are given higher priority use of loading and unloading facilities, whilst operators of independent services may face delays. Stakeholders have mentioned that this has happened in the past, or is still happening in some cases in Germany, Hungary and Italy.
- 5.39 It is important to note that the experiences mentioned in the preceding paragraph are much less prevalent in terminals where the operator and/or owner of the facility is a third party, not tied to the infrastructure manager or to an incumbent rail operator.
- 5.40 Some stakeholders have told us that the prices for certain services within terminals operated by incumbent entities are very high. In the case of combined transport, stakeholders have told us that they can expect to pay upwards of €25 per container moved on one network, substantially higher than the cost of this service in other networks. We were unable to undertake a full comparison of the cost of handling a

container in different locations and between Member States, since the large majority of stakeholders were reluctant to reveal either the prices they paid (to the facility manager) or the prices they charged (to the railway undertaking.) However, it is important to note that differences in price between various networks are not necessarily a result of price discrimination; they may also reflect differential costs in the provision of services, related either to equipment used or staff costs incurred.

- 5.41 Freight terminal charges are an important issue on all networks. We recognise that underlying costs may vary for objective reasons, and that different terminal operators may use different charging structures that reflect their own commercial objectives. However, there is generally little transparency and, as a result, there is considerable potential for discrimination between clients.
- 5.42 While greater price transparency is something that is desired by the majority of stakeholders around Europe, the majority of individual stakeholders are also unwilling to divulge their charges for confidentiality reasons, and for fear that they may have been treated more favourably than others, and as a result lose their advantage. The prime example to draw upon here is Great Britain where the charges related to a large number of rail-related services such as access to freight terminals and the services within those terminals are commercially confidential, and set through bilateral negotiations. There is no way of knowing the rates that are being charged to the different clients within the same terminal, or to an individual client using a range of terminals. However, it should be noted from our stakeholder discussions that terminal and rail operators in Great Britain have not specifically requested that more transparency be introduced into the pricing structure.
- 5.43 Access conditions in a number of networks are unclear in respect of access to rail freight facilities. Access agreements for rail freight services often relate to station to station flows, or to flows between designated traffic exchange points only, and do not cover the overall transits from freight facility to freight facility: as such, operators may arrive at a station on time, but then be obliged to wait for a significant period before being shunted into the terminal or siding where the cargo is unloaded. In a number of cases, accurate information on the actual opening times of the facilities is not provided and as a result, an operator may arrive and find that access to the facility is not available, or that the facility has no immediate resources available to unload the cargo.

Services in marshalling and shunting yards

- 5.44 A number of stakeholders have mentioned that there are problems with the provision of marshalling and shunting services in a number of networks. The stakeholders that we have spoken to have told us that these problems have occurred in France, Germany, Italy, Hungary, Norway, Spain and Sweden.
- 5.45 They have complained that the procedures and requirements for obtaining access to

these services are in some cases unclear, and in other cases too onerous. In Germany, for example, some stakeholders mentioned that new market entrant operators have no access at all to large marshalling yards, and, that the total number of marshalling yards has anyway been reduced significantly in recent years, giving new operators a very limited number of possibilities to sort and assemble groups of wagons into trains.

- 5.46 In Italy, some stakeholders have mentioned that although RFI is obliged to provide this service to all operators, it does not have the equipment and resources to discharge its obligations, so it is up to the individual facilities or operators to provide the services. As a result, individual operators need to undertake the services themselves, or arrange for them to be provided by other companies. Furthermore, the cost of shunting services in some facilities can be up to 3 times the cost of the same service in another facility. While in principle, this variation may not be a problem if the price differential is a function of objective differences in the costs associated with service provision, the lack of transparency in charging for these services makes it difficult to define the cause of the price variation. It should be noted that these differentials in Italy are also as a result of the fact that the relevant Ministerial Decree setting the charging principles for these services is yet to be published; following the publication of this Decree the level of transparency should increase.
- 5.47 In France, a respondent said that the incumbent's offers of space in marshalling yards to store or sort wagons were very restrictive: moreover, only limited progress had so far been made in leasing disused marshalling yards or rolling stock maintenance facilities as a permanent operating base for a new entrant, despite the spare capacity released as a result of the incumbent's programme of rationalising rail freight services.
- 5.48 In Norway and Sweden we have been told that, on some occasions, there are problems with prioritisation in the shunting of wagons and that, in some cases, the shunting requirement of the new entrant may be delayed while shunting is undertaken for the incumbent operator. Stakeholders have mentioned that this does not occur systematically, but has occurred on a significant number of occasions, both as a result of capacity issues and as a result of behavioural reasons.
- 5.49 Some stakeholders also mentioned that the difficulties with this service reflected the more general problem that some new entrant operators are not being given adequate priority by facility owners or service providers, regarding the shunting of their vehicles, and the preparation of their freight trains for departure. While this was not a widespread phenomenon, it had occurred on some networks: in turn, this may be due to the absence of clear guidelines in most networks, regarding the prioritisation of services of the same type operated by different –and potentially competing– entities.

Train formation services

- 5.50 We have not received any complaints about the formation of passenger train services.

This service is undertaken for third parties in only a small number of networks where there are multiple passenger operators, including new entrants. In Great Britain, for example, train formation is done in-house by the majority of operators; this also reflects the fact that the majority of the services are operated by bi-directional fixed formation unit trains.

Services in storage sidings

- 5.51 We have not received any specific complaints about access to, and services provided within, rolling stock storage sidings. We should however point out that the Federal Networks Agency in Germany has dealt with complaints relating specifically to storage sidings. Furthermore, Article 10 of the Railway Utilisation Regulation states that priority has to be given to applications for capacity that result from a path request from a previous capacity allocation.

Maintenance, inspection and cleaning of rolling stock

- 5.52 A number of stakeholders have expressed concern about the access arrangements and prioritisation procedures within depot and maintenance facilities, identifying causes for concern similar to those applying to access to freight terminals. This problem has been experienced in Germany, France, Italy, Norway and Sweden.
- 5.53 In Germany, we have had specific complaints about this issue and the Federal Networks Agency has explained that it has received some complaints regarding the provision of access to maintenance facilities. The complaints focused mainly on the prices quoted for these services, as well as the minimum services that need to be provided in these facilities.
- 5.54 In Italy, some stakeholders had problems accessing maintenance facilities before the implementation of the national liberalisation legislation; since the entry into force of the Legislative Decree 188 in July 2003, this problem has been resolved.
- 5.55 In Norway and Sweden, we have been told that in some cases there are problems with access to these facilities as a result of prioritisation and capacity issues. Furthermore, the cost of the services provided in these facilities can be very high. Similar problems have been experienced in France.
- 5.56 Access to these facilities is essential for the safe and efficient running of rolling stock. Some new entrant operators have reacted to this by bringing in their own staff to undertake the inspection, cleaning and maintenance of the rolling stock; this is frequently done in some of the jointly-used maintenance facilities in Great Britain.

Back-up services

- 5.57 We were not informed of any significant problems in relation to the provision of back-up services on any networks.

Locomotive pushing service

- 5.58 In most cases, locomotive pushing services are provided from an operator's own internal resources. The systematic requirement for locomotive pushing mainly affects the Alpine corridors, however the situation in the countries across these corridors is by no means the same. We have been informed that technical requirements exist in Italy so that locomotive pushing in the true sense of the word is not allowed. That is the use of supplementary traction to cross the Alpine passes is allowed, but it must be added to the front of the convoy and cannot push at the back as in other networks. This is made worse by the fact that the crossing of the Alps is more expensive in Italy than in other networks in terms of staff usage, and even more so when compared to Austria where the trailing, (pushing) locomotive can be controlled at a distance by the leading locomotive with no extra drivers.

Services in border stations

- 5.59 With the opening of internal borders within the EU, one major barrier to cross-border freight transport was effectively removed, and the time taken waiting at borders for documents to be checked has, in theory, diminished substantially or has been completely removed. However, we have obtained mixed conclusions from our industry consultation on the actual achievement of these benefits in practice.
- 5.60 While a large number of stakeholders stated that they have no problems in crossing borders as their trains are hardly ever stopped for random checks, a small number of the operators we spoke to have told us that they have experienced systematic rather than random checking of their freight services, both in the case of borders between two Schengen countries, and borders between extra-Schengen countries. This has occurred at one of the Italian Alpine borders where a new entrant operator was systematically stopped for random inspections in the initial months of operations and as a result suffered frequent delays; however, this problem has now subsided. We have been informed that the intrusive inspections occurred because new entrant operators were not initially covered by existing bilateral agreements between the Italian customs agency and the former state railways, and that recently this agreement has been extended to benefit other operators.
- 5.61 Delays in border crossings for similar reasons have also been experienced in Romania. In this case, the problem related to passenger transport, where the time taken to cross the border is much longer than it should be, as experienced at other border crossings.

- 5.62 A stakeholder in Hungary told us that they had encountered substantial problems passing the Hungarian border, when crossing from a non-EU country. The undertaking mentioned that on one occasion its train was held at customs for a substantial amount of time while ownership of the rolling stock was verified.
- 5.63 The second important service that is undertaken in border stations relates to the transfer of rolling stock from one electrification system (or gauge) to another in the case of non-interoperable rolling stock, and to the technical inspections permitting interoperable rolling stock to run on the adjacent network. We were not told that this was a problem for any of the stakeholders; furthermore one of the stakeholders we spoke to in Italy mentioned that the time taken to undertake this activity was fairly standard across the networks. From the perspective of this stakeholder, the process was very efficient.

Training services

- 5.64 A number of stakeholders have told us that a key problem they still face is being able to source trained drivers for their services. In Denmark, Norway and Sweden, this is due to there being a limited number of potential drivers, since there is greater demand than supply, but in other networks it is mainly due to new entrant operators not having access to the training facilities of the incumbent operator.
- 5.65 In the above mentioned Scandinavian networks, the problem has been resolved by separating the staff training body from the incumbent operating company, thereby creating an independent institution capable of treating all training requests equally, as well as undertaking correct demographic planning of the driver requirements for the entire industry. This has also been done in Austria; in Great Britain demographic planning of most driver requirements is undertaken on a voluntary basis, co-ordinated through the Association of Train Operating Companies.
- 5.66 The problem of not being granted access to incumbent training facilities has been pointed out to us by stakeholders in Italy and France, and by some stakeholders seeking access to rail networks within those Member States.
- 5.67 In these networks, new entrant operators have had to open their own training facilities on an individual basis, at considerable expense. This introduces an important entry barrier into the market and increases the cost bases of the new rail services, as the operators concerned need to meet not only the variable costs of staff training, but also the fixed costs associated with a training centre. This has been the case for Véolia Transport in France which set up its own training facility, firstly in addition to using SNCF's facilities and subsequently to meet all its training requirements when SNCF's training facility was no longer made available to Véolia. The new entrant operators in Italy have also set up their own facilities.

- 5.68 This is a second best solution for the operators (and the markets) in question, where the first best solution would be for one or more bodies to supply this service independently of the operating companies, and as a result, to provide equal and non discriminatory access to training facilities.
- 5.69 It is important to note that the operators who have set up their own activities have obtained the licence to undertake this activity from the infrastructure manager, who has provided these licences without any difficulties.
- 5.70 Furthermore, it must be noted that in some networks, the stakeholders we contacted mentioned that there were no problems with regards to access to training facilities, in particular in Great Britain and Switzerland. We have had conflicting responses for Germany, where some stakeholders have stated that they have no problems accessing training services provided by other companies, while others that say that the cost of driver training, both from DB Bildung and from the private operators, is very high.
- 5.71 Some stakeholders across Europe have explained that transactions costs would be greatly reduced if there were one multilateral European railway licence. With such a licence, drivers would only have to learn specific routes rather than go through the competence-testing process in each network. It is argued that the lack of such a licence increases the cost of training drivers and limits their availability in respect of cross border traffic, which as a result, increases the upfront costs faced by new entrants. This is a problem that should slowly disappear with the introduction of the European Rail Drivers' Licence provisions included in the Third Railway Package.

Provision of on-board train protection systems

- 5.72 In the Italian and Norwegian market, we have been told that there are some problems in the supply of these systems as a result of a manufacturing backlog. This however led to a problem with respect to access charges in Italy; see the Italy country chapter in Appendix A for more details. A British stakeholder mentioned a temporary problem in procuring equipment required to operate locomotives in France.

Telecom and communication services

- 5.73 We have not been informed of any problems in relation to the provision of telecom and communication services.

Telematics services for freight operations

- 5.74 Stakeholders have not mentioned any specific problems in relation to telematics services. The majority of these operators use their own internal telematics systems, so

as to be able to match their internal networks.

Computer reservation services for passenger transport

- 5.75 We have not been told of any problems in relation to access to computer reservation services for passenger transport. We were told, however, that the systems that are currently being used in some of the networks are not very efficient.

Leasing of rolling stock

- 5.76 A number of stakeholders have told us that they have had difficulties in obtaining leased rolling stock, mainly as a result of the high leasing charges that precluded this being an economically viable solution. This was mentioned to us by stakeholders in Belgium, Norway, Sweden, Czech Republic and Italy. Furthermore, we have recently been informed that the Department for Transport in the United Kingdom has asked its rail regulatory body to investigate domestic rolling stock leasing charges, as it believes that the franchise operators are paying too much for certain types of passenger trains; this complaint has now been referred to the UK Competition Commission. It is important to note that in Germany, which has a very large leasing market, there have not been any complaints in relation the cost of leasing rolling stock.
- 5.77 In the majority of cases, the establishment of rolling stock companies was taken forward to reduce the barriers to entry into the various national and international markets. In this context, the fact that some new entrants complain about the high price of leasing seems to go against the original goal of rolling stock leasing.

Leasing of staff

- 5.78 We have not been informed of any specific problems in relation to the leasing of staff, except for in those networks where this service is not allowed, that is in Belgium and Italy. This is discussed in more detail in the Legislation chapter below.

Summary of stakeholder analysis

- 5.79 It can be seen from the various service categories mentioned above, that a number of Member States seem to appear frequently in the description of problems that have occurred in the past, or that are still occurring. This is as much a result of the fact that these markets have substantial new entry (and, by definition, the more players there are in the industry, the more problems that are likely to arise) as they are for other reasons such as capacity constraints, and the industry practices of the dominant incumbent operators.

- 5.80 Based on the stakeholders' comments we have gathered, it is important to note that whilst some problems do exist with respect to some rail-related services on a number of networks, there are no systematic problems across all networks in relation to any specific service. The key comment remains that the majority of stakeholders see these problems as transitional: they expect that many of these problems will fall away as incumbent operators, new entrants, new rail industry bodies and the regulatory institutions that are being set up domestically, become fully functional and experienced in exercising their activities and responsibilities.
- 5.81 Conversely, it is also essential to point out that not all the networks that are analysed in this study had significant market participants in addition to the incumbent, and as a result could not provide an independent view of the conditions within that market. The fact that we were not told of any problems in some networks does not imply that there are none, or that problems will not develop; it is also an indication of the limited number of entities currently operating in the markets concerned.

Complaints/procedures dealt with by regulators or competition authorities

- 5.82 From the information that we were able to gather through our interviews with these authorities, we could only identify a small number of complaints to regulatory or competition authorities that referred directly to the provision of rail-related services. These are in addition to those mentioned directly by the stakeholders above. The most significant ones related to the following:
- Refusal to supply freight locomotives: UK. Case closed as the market for new and 2nd hand locomotives is now effectively open;
 - Access to industrial lines: Hungary, infringement identified;
 - Access to facilities: Italy, infringement identified (prior to the liberalisation process);
 - ZSSK in Slovakia being fined for obliging its customers to use its own brand of cargo carriage seals;
 - ProRail in the Netherlands was found to be in breach of the National Railways Act with regard to information provision relating to access to the network and to rail-related services (in particular, capacity allocation at stations and marshalling yards). The main decision relating to core network capacity allocation has been reversed, while in relation to marshalling yards, ProRail has accepted the decision and has undertaken to provide further information in the 2008 Network Statement;
 - Numerous complaints dealt with by the German regulatory body either formally or informally (270 in all, not related exclusively to rail-related services).
- 5.83 In addition in Germany, the Federal Network Agency is currently investigating whether the regulations currently in force limit the responsibility of the infrastructure manager to ensuring access to shunting facilities, or whether there is also an obligation on the infrastructure manager to undertake (or procure) the actual shunting activity.

Information barriers to access

- 5.84 Rail-related services, while not constituting part of the core network, are very important in the effective running of any rail service. Without some form of equitable access to rail-related services, comparable to that applicable to the general network, there would not be any stations for new passenger services to call at, or terminals for freight trains to load and unload their goods. Just as important are such services as fuelling and energy provision and depot and inspection services.
- 5.85 For rail operators, the ability to know or to obtain information relating to the requirements that need to be fulfilled to gain effective access to rail-related facilities and services is a key issue. Operators require appropriate information to access these facilities and to use the services offered – the access conditions – so that they can plan their business activities and make proposals to potential customers with a degree of certainty. Without this information, operators are faced with potential barriers to effective access to the rail system, and hence will be at a disadvantage in launching services that are competitive with those offered by incumbents.
- 5.86 The majority of infrastructure managers publish the access conditions for the network as a whole in their Network Statements, which also contain (in varying levels of detail) information on access to rail-related services. The Technical Appendix sets out our analysis of the conditions for access in each of the networks, mainly taken from these Network Statements but also supplemented by other technical documentation and by information about the arrangements actually adopted in practice.

Examples of best practice in information transparency

- 5.87 It is important to point out that there are elements of the information base within some networks that can be seen as pointing to best practice. And while no individual network can be set above the others as offering complete transparency for the full range of rail-related services, there are lessons to be taken from a number of networks that could be used to improve transparency and facilitate market growth in other networks.
- 5.88 The main example we have identified is the information that is available in the Norwegian Network Statement in terms of some freight facilities: not only is there a full description of opening times, but there is also information on the facilities and services that are available within each facility. However, the infrastructure charging regime does not disclose the specific charges applicable to facilities that are included in the basic access price. Despite this, the Norwegian Network Statement still provides substantial amounts of information in terms of access conditions.
- 5.89 While not providing the same level of detail as in Norway, some other networks have also developed frameworks that are more transparent than in the majority of EU

Member States. Networks in Germany and Austria, for example, publish a product catalogue setting out important information regarding the price of a number of rail-related services, but with less information than the detailed conditions for access. The Spanish Network Statement also provides details in relation to the charges for each service, as well as some information on the facilities available within each installation.

- 5.90 In Belgium and France there is detailed information on the facilities available within specific installations, but no information on access to the facilities, although in the case of France, the Network Statement also includes the charges for access to these facilities. In Italy, although the Ministerial Decree setting out the requirements for a number of principles for rail-related services has not yet been completed, the infrastructure manager's Network Statement does set out a number of procedures (access conditions) that need to be followed when accessing marshalling yards and freight terminals, and sets out who is responsible for which processes.
- 5.91 While there is information in relation to the prices and the cost of access to rail-related service facilities in Luxembourg, there is no information on the details for access to such facilities as freight terminals, but there are contact details of the relevant person from whom to request this information. Finally, in the UK there is very little published information on prices or access conditions to installations such as freight facilities; however, there is a wide range of independently owned and operated facilities accessible by commercial negotiation, and a very detailed appeals procedure has been published to address circumstances where parties fail to reach a commercial agreement. This provides stakeholders with an incentive to voluntarily reach bilateral commercial agreements, and provides prospective clients with a degree of certainty in the event of a dispute with a facility owner or operator.

Case study

- 5.92 Our analysis has sought many different information sources to assess the various access conditions for the provision of rail-related services. Firstly and most importantly, we sought the direct involvement of the stakeholders within the industry to find their views and their opinions on the manner in which these services were being provided, and whether they had any specific opinion on the arrangements for granting access. Our analysis also involved discussions with regulatory bodies to understand any problems that they had addressed during their daily activities. We found, however that these sources of information, supplemented by our review of Network Statements were, in general, insufficient to fully understand the information required by an operator seeking to access key rail-related facilities or services.
- 5.93 In order to complete the analysis of access conditions for these services, we took our investigation one step further and proceeded to undertake a case study for each country, from the point of view of an operator wanting to access these facilities. The aim of this case study was to assess the level of transparency and the ease with which this information can be gathered by an operator trying to access these facilities.

- 5.94 The non-exhaustiveness of the majority of the Network Statements, in terms of limited transparency and the absence of detailed access conditions to use rail-related services and service facilities – as emphasized in the previous section – led us to consider additional information sources to complete the analysis. Most importantly, we decided to contact the One Stop Shop offices of RailNetEurope members. Whilst we are aware that the remit of RailNetEurope and the One Stop Shop offices is not primarily the provision of information on access conditions to rail-related facilities, this is likely to be the first port of call for potential operators seeking further information following a review of individual Network Statements.
- 5.95 Established in January 2004 by the majority of European Rail Infrastructure Managers, RailNetEurope (RNE) has the principal objective of developing international business opportunities for the use of European rail infrastructure, to support the European Commission’s policy of encouraging growth in international rail freight traffic. As their main operational initiative, the RNE members have set up One Stop Shops (OSS) working as a network of customer contact points within the framework of RNE. Acting in close cooperation with relevant infrastructure managers, the OSSs:
- Offer customer support and information on the full product and service range of the infrastructure managers;
 - Supply all the information required to gain access to the infrastructure of any infrastructure manager participating in RNE;
 - Handle requests for any international train path within RNE;
 - Make sure that requests for the next timetable period are duly taken into account in the yearly timetabling process; and
 - Provide train path offers for the whole international journey.
- 5.96 The idea of undertaking a case study and contacting the OSS to receive additional useful information for our study, was based on the assumption that the OSS would have been able to provide us with details regarding at least those terminals lying on the international train paths.

Assumptions

- 5.97 For this case study analysis, we started with the assumption that the operator (which does not have to be a new entrant) already has the rolling stock and personnel etc. and is aware of the conditions for access to the main network (i.e. the minimum access package), as well as having done some preliminary analysis to find out whether there is capacity on the national network for that type of service.
- 5.98 A large number of services are covered by this study, and our basic questionnaire tried to collect data across the full range of rail-related services. However, in this case study, we focused on access to and services within freight terminals, as this is the

service that is of most interest to freight companies. Furthermore it is the service where there is usually more information available.

Methodology

- 5.99 Assuming that the operator has already looked at the Network Statement and evaluated its contents, we then proceeded to contact the various network's OSS for initial, more detailed, information. In the case of those Network Statements that contained further information, including details of relevant parties to contact for further information, we followed the information within these documents. In order to give more emphasis to the survey we also sent a request to the OSS Joint Office in Vienna informing them about our study.
- 5.100 The questions were in the form of email requests that were followed up by further clarifications, both through emails and through telephone conversations. Given that, in the majority of cases, the Network Statements were not exhaustive in terms of the information provided, we requested the following information on service prices and conditions concerning access to, and services within:
- Terminals: terminal opening hours, staff allowed to work within the terminal; types of activities allowed to be undertaken within the terminal; procedures/priorities for moving rolling stock from the main network to the facility and vice versa; maximum length of the trains allowed, etc. (as access is different in each terminal, the request was limited to one example of a terminal used by more than one railway undertaking);
 - Marshalling yards and services: whether the marshalling/shunting had to be done in house or by the facility owner; what are the procedures/priorities for moving rolling stock from the main network to the facility and vice versa? Etc.
 - Fuelling points: opening hours; access request procedures; is there a requirement to use of the same facility on a regular basis? Timescales for fuelling, specifying the minimum/maximum amount of time needed to do the fuelling? Etc.;
 - Maintenance facilities and depots: opening hours; type of train maintained and approach to prioritising maintenance cycles; is there a requirement to use the same facility every time? Is there a requirement to undertake a minimum number of tests and do these tests need to be done in certain facilities? Etc.;
 - Training facilities: what are the requirements to access driver training facilities? Etc.

Results

- 5.101 The flow chart below sets out a diagrammatical representation of the process that we used to take forward the case study. As can be seen, following the initial evaluation of the Network Statement and the results of the requests sent to OSS contacts (including in some cases a second enquiry via email and telephone after two weeks from the first contact) the results can be segmented into three categories:

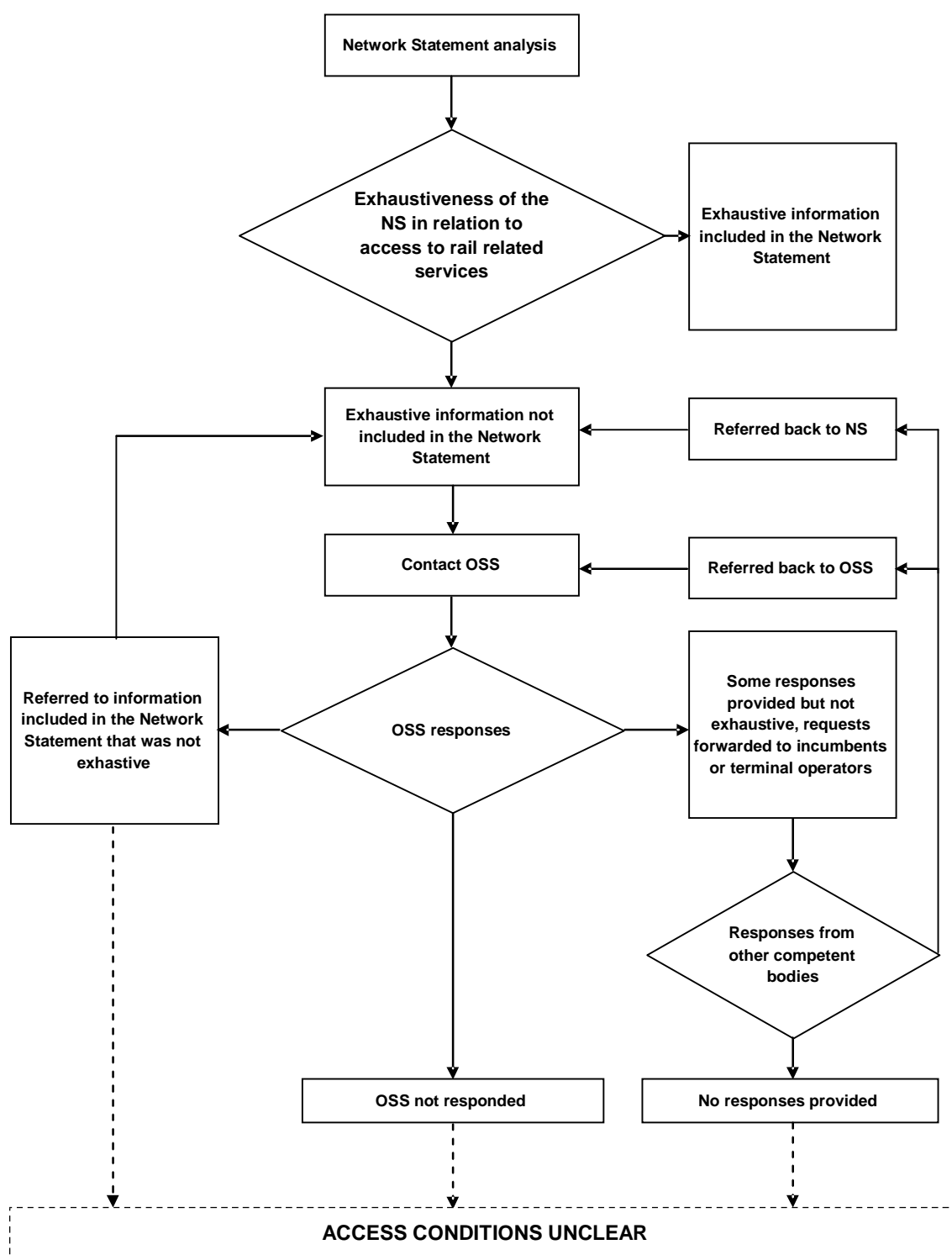
- Provided some useful information and forwarded us to the third parties that managed the facilities or the services;
- Referred us back to the Network Statement without providing us with further information; and
- Did not respond to our requests.

5.102 In all three cases, if additional information was not provided we had to conclude that the access conditions were unclear.

5.103 We have not included individual flowcharts for each network in the main report, but we have provided a summary flow chart that shows all the options that we encountered during our study. A network by network breakdown is included in each of the country chapters in Technical Appendix A. It is important to note that of the 24 OSSs⁷ that we contacted, only about one-third responded, the response rate is shown in Table 5.2 below.

⁷ As the Lithuanian, Latvian, Irish and Northern Irish networks do not have a One Stop Shop we did not contact them.

FIGURE 5.1 CASE STUDY PROCESS FLOW CHART



Source: Steer Davies Gleave analysis

TABLE 5.2 LEVEL OF RESPONSES TO THE CASE STUDY

OSS Contact	State	Responded	Not responded
ÖBB Infrastruktur Betrieb AG	AT		•
DB Netz AG	DE	•	
Jernbaneverket (JBV)	NO		•
Raab-Oedenburg-Ebenfurter Eisenbahn AG/ Győr-Sopron-Ebenfurti Vasút RT (RAABERBAHN / GYSEV)	AT- HU		•
Rede Ferroviária Nacional, E.P. (REFER)	PT		•
Network Rail	UK		•
Infrabel S.A de droit public; Direction Accès au Réseau	BE		•
Železnice Slovenskej Republiky (ŽSR)	SK		•
Banedanmark	DK	•	
Rete Ferroviaria Italiana SpA (RFI)	IT		•
Administrador de Infraestructuras Ferroviarias (ADIF)	ES	•	
Ratahallintokeskus, (RHK)	FI	•	
Société Nationale des Chemins de Fer Luxembourgeois (CFL)	LU	•	
Banverket (BV)	SE	•	
Réseau Ferré de France (RFF)	FR		•
ProRail B.V.	NL		•
Schweizerische Bundesbahnen (SBB)	CH		•
HELLENIC RAILWAYS ORGANISATION S.A. (OSE)	EL		•
PKP Polskie Linie Kolejowe S.A. (PKP PLK SA)	PL	•	
Ceské dráhy, A.S.	CZ		•
Compagnie Nationale des Chemins de Fer (CFR)	RO		•
Vasúti Pályakapacitás-elosztó Kft. (VPE)	HU		•
Holding Slovenske Železnice d.o.o. (SŽ)	SI	•	
National Railway Infrastructure Company (NRIC)	BG		•

Source: Steer Davies Gleave analysis

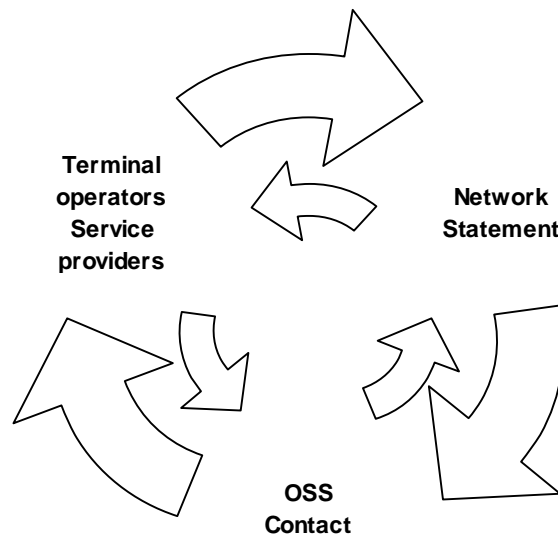
- 5.104 Of those OSSs that responded to our request, in one case the OSS that we contacted simply invited us to refer back to their Network Statement, and refused to consider the more detailed level of our request. In the other instances, the OSS contacts directed us firstly back to the Network Statement but also provided us with some further (non-exhaustive) information: in some cases, the OSS invited us to speak directly to the managers of the terminals or of the facilities within the terminals - in the majority of cases providing us with relevant contact details.

- 5.105 Having been provided with the relevant contacts, we then contacted the managers of the terminal facilities concerned: however when contacted, some of these managers simply referred us back to the OSS for more information.
- 5.106 It is worth pointing out that the above mentioned mixed response is a common one: An infrastructure manager may only be able to provide a detailed response for the network, facilities and services it manages directly, and often has a very poor knowledge of the way to access and operate those rail-related services provided by other organisations. Rail-related services are provided by a number of different institutions, and when it is not the infrastructure manager that provides them, the OSS simply forwards the operator to the organisation providing these services, specifying that relevant conditions of access are to be agreed with the service provider and/or terminal operator, which in some cases happens to be the incumbent.
- 5.107 When asked about controls over access discrimination, OSSs and infrastructure managers generally referred to provisions in the relevant in Network Statements, and confirmed that in the event that an operator does not agree with the service provider, he can appeal to the regulatory and/or competition authority.

Conclusion

- 5.108 The resulting *information loop* (*Network Statement – OSS contact – Terminal operator/Service provider*) reveals a very fragmented framework in terms of institutions involved in the railway industry. The current allocation of responsibilities is far from being sufficiently comprehensive, coherent and adequate to assure the basis of transparent access to the full range of rail-related services. Some of the OSS contacts we spoke to explained that the information we had asked them to provide was very difficult to obtain, and that they could not provide us with the answers.

FIGURE 5.2 INFORMATION LOOP



Source: Steer Davies Gleave analysis

- 5.109 The most important conclusion of our case study is that the majority of cases, neither the Network Statement nor the OSS acting in conjunction with the national infrastructure manager, is able to provide all the necessary information regarding access to the range of rail-related services required by prospective rail operators seeking to launch new services: the inadequate availability of information is likely to impact most adversely on new operators seeking to enter the market.
- 5.110 Access conditions also remain unclear: lack of information remains an issue, both in terms of prices – mostly available only for those services provided by the infrastructure manager – and more generally in terms of the specific conditions to be complied with in order to access the necessary rail-related services. This imposes an important barrier on an operator as the information that he can gather before any (private) contract negotiation is taken forward, is close to zero on some networks. It is important to reiterate that for this analysis we had chosen a service, and a facility that is one with the most information available; for example in the case of access to marshalling yards and the marshalling service itself, the situation with regards to information transparency is much worse.
- 5.111 To further improve the transparency of access to publicly-provided rail-related service facilities, we consider that Network Statements should contain information regarding:
- The opening times of rail-related facilities;
 - A list of the documentation required to access the facility (if any is required);
 - An indication of whether there is capacity available in the facility;
 - The charges for accessing the facility;

- The services and equipment in these facilities; and
 - Contact details of the people necessary to arrange access to these facilities (if different from the One-Stop-Shop provided by the infrastructure manager).
- 5.112 If this cannot be done, the best practice examples mentioned above should be followed. The details listed above comprise essential information that a current or potential rail operator will require, in making a strategic decision as to whether to obtain access to the rail system: accordingly, this information should be included in the Network Statement even if the infrastructure manager (or the body preparing the Network Statement if this is not the infrastructure manager) does not itself directly operate the facility.

Prices for access to rail-related services

- 5.113 One of the areas that we were asked to look at in this study is the prices charged for access to rail-related services. A number of the parties within the industry are privately-owned, and are not part of any public or semi-public body; as a result, they were not willing to provide us with the prices that they charge for these services. Nevertheless we have been able to obtain a restricted amount of price information that is included in the individual country chapters in Appendix A.
- 5.114 Pricing principles for rail-related services are included in Article 7, paragraphs 3, 7 and 8 of Directive 2001/14/EC. More specifically, the charges should:
- Be set at the cost that is directly incurred for track access to service facilities;
 - Take account of the competitive situation of rail transport in the case of track access to the facilities mentioned in Annex II paragraph 2; and
 - Relate to the cost of providing the service in the case of the additional and ancillary services.
- 5.115 Despite the requirement for facility operators to adhere to these principles, it has not been possible to evaluate whether the examples of pricing structures that are provided below actually reflect the provisions of the Directive.
- 5.116 We have been informed of a number of complaints in relation to the prices of some rail-related services in certain networks. The examples in Germany almost always relate to complaints made by new entrants, but this is not systematic across Europe: in Sweden the incumbent operator has informed us that they have complained about the cost of a number of rail-related services, and we have seen that in Great Britain, the Ministry (Department for Transport), as sponsor and funder of rail passenger services, has complained about the cost of leasing rolling stock from privately-owned leasing companies.
- 5.117 We have built up a database of access charges for different facilities across the

networks we are studying. The first thing to note is that the prices that we obtained are by no means homogeneous across countries, in terms of structure and level of tariff, or measurement parameter. This makes a cross-network comparison extremely difficult. However in the next section we provide some comparative information based on the prices that we were able to obtain for access to freight terminals, marshalling yards, station access charges, traction electricity charges and stabling charges.

Access to freight terminals

- 5.118 The cost of access to freight terminals in a number of networks is shown below:
- Austria: €0.30 per hour per vehicle;
 - Czech Republic: €1.90 per thousand gross tonne-km;
 - France: €166.50 – €13,901.82 per train per month depending on the facility used;
 - Luxembourg: €2.60 per day;
 - Netherlands: 14% surcharge on the train km tariff;
 - Slovenia: €0.30 per number of wagons to be loaded/unloaded;
 - Spain: Access to Group 1 terminals - €62.95 per train, Group 2 terminals - €38.50 per train. Dispatch from Group 1 terminals - €62.95 per train, Group 2 terminals - €38.50 per train. Plus a supplement per wagon for dangerous goods equivalent to €1.50.
 - Sweden: €0.00 per vehicle;
 - Switzerland: between €1.94 and €3.23 per access, depending on the facility.
- 5.119 In the case of other networks, the price for access to freight terminals, but not necessarily the charges for handling cargo at those terminals, is included in the minimum access package. It can be seen from the limited number of networks listed above, that there is not a substantial amount of transparency in the prices for access to these facilities. The information in a number of networks is not available, for example, either because the relevant operators consider it to be confidential (e.g. the privately owned rail and rail-related facility operators in Great Britain), or because the facility is not owned by the national infrastructure manager and there is no requirement for the information to be published within a Network Statement.
- 5.120 It can be seen from the range of prices we were able to obtain, that there is a substantial variation in the charging methods and prices for access to freight terminals. While this is only a small subset of the countries studied, the facilities are clustered around an important international trade route and could also, in some cases, be in competition with one another. For a shipper or freight train operating company it is not easy to compare the cost within these facilities as a result of the different parameters used. On the other hand, these networks have at least introduced a transparent charging scheme, which can be beneficial to the operators.

- 5.121 In addition to the issue of access to the sites themselves, we have noted that the main problem arising at freight terminals is the cost of the services within these terminals. As mentioned in the stakeholder consultation section above, we have asked the industry participants to provide us with cost and charging information with respect to the services that are undertaken. However, as a result of commercial confidentiality, stakeholders have not been willing to provide this information.

Marshalling yards

- 5.122 Charges for access to marshalling yards and the prices for shunting and marshalling activities are, similarly, far from homogeneous. There are various forms of shunting, the most representative being that of individual wagons. As such, in those networks where there a number of charges, we have focused on that category; in the remaining networks we have included the most relevant parameter. The prices that we have been able to obtain are included below:

- Austria: €2.76 per wagon;
- Switzerland: €3.22 per wagon;
- Germany: Access to facility €14.00; shunting €4.00 per wagon;
- Denmark: €14.75 per wagon;
- France: Monthly facility access charge: €34,391.30 + VAT; Monthly usage charge: €17,196 + VAT;
- Netherlands: 14% surcharge on the train km tariff⁸;
- Portugal: €16.86 per person/hour;
- Romania: €1.00 per train km;
- Slovenia: €15 per access;
- Spain: Marshalling with a shunting locomotive - €237.50 per train. Marshalling without a shunting locomotive - €102.50 per train (in this case the service is done by each operator independently).
- Sweden: €0.43 per wagon.

- 5.123 From the information included in the list above, it is clear that a charge based on the number of wagons to be moved and marshalled is likely to be more cost reflective in many cases than a standard monthly usage fee; furthermore, in many cases, a per-wagon charging structure will incentivise and facilitate the operator of the facility to apportion costs and profitability across its activities in a more effective way. However this may not be true for all facilities; it will undoubtedly apply to significant changes in traffic volumes in labour intensive marshalling yards; but in major mechanised yards; the fixed facility costs may be very high, and variable usage costs may be very

⁸ This will change to a specific figure for the 2008 timetable following the decision taken by the NMa mentioned above.

low, so per-wagon pricing may not be directly cost-reflective.

- 5.124 Looking more closely at the per wagon shunting charges shown in the list above, it can be seen that the prices vary considerably, from €0.43 per wagon in Sweden to €14.75 per wagon in Denmark, and also that the adjacent networks of Austria, Germany and Switzerland have similar levels of charge. The high figure for Denmark seems to point to an element of fixed charge that is included in the overall shunting charge – for example the charge for access (which for example is separated out in Germany) but this would still mean that the costs are substantially higher than in the other networks.
- 5.125 It is hard to see how the charge in Sweden can truly reflect even the marginal cost of the activities to be undertaken, given its level.

Access to stations

- 5.126 Many Networks Statements contain station access charges for their networks, but again the charges were found to be very different across Member States. The table below sets out those charges following the national parameters utilised.

TABLE 5.3 STATION CHARGES

Network		Station access price (€)				
Per stop	Category 1	Category 2	Category 3	Category 4	Category 5	
<u>Austria</u>	6.54	3.12	2.03	1.18	0	
Per stop	Large stations	Other stations				
<u>Switzerland</u>	3.22	1.18				
<u>Great Britain</u>	Total station cost is divided between operators according to the number of stops and passengers of each operator: From €18,077 to €6,042,883 per station per annum					
Per stop	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
<u>Germany</u>	13.96 – 40.01	10.28 – 34.64	4.65 – 19.94	0.00 – 2.74	1.46 – 9.03	0.00 – 3.44
Per passenger	Category 1	Category 2	Category 3			
<u>Spain</u>	0.08 - 0.77	0.06 – 0.48	0.02 – 0.04			
Per stop	Category 1	Category 2	Category 3			
<u>Hungary</u>	13.00	5.40	2.20			
Per stop	Category 1	Category 2	Category 3			
<u>Netherlands</u>	5.08	2.49	0.86			
Per year	Category A	Category B	Category C	Category D	Category E	
<u>Portugal</u>	245,000	100,000	40,000	10,000	1,000	
Per stop	Category 1	Category 2	Category 3	Category 4		
<u>Slovenia</u>	5.00	3.00	2.00	1.00		

Note: categories are not homogeneous across countries and only reflect national quality and service levels

- 5.127 The table above gives an indication of the different level of charges across networks. While in some networks, the “per stop” rate is similar, any comparison should only be undertaken with great caution, since the categorisation of station that has been adopted in each network is very different. In some networks the definitions are based on the size of the station concerned; in other networks, by contrast, categories are a function of the number of passengers that pass through the stations; in yet others, categorisation is determined by the facilities that the stations offer or the annual maintenance costs at the station.
- 5.128 Having said that, the strong correlation between the size of station, the number of passengers that pass through it, the level of maintenance costs and the facilities at those stations, mean that the categories should be generally comparable and have broadly similar operating costs and, consequently, similar cost-reflective access charges. However, looking at the Category 1 stations, it can be seen that there is substantial variation ranging from €3.22 in Switzerland to a maximum of €40.01 in

Germany. This variation can signify either a large differential in terms of operating and maintenance costs, different demand management approaches or different definitions of station categories.

Electric traction charge

- 5.129 The overall charge for the supply of traction electricity in some Member States is divided into two elements; the charge for access to the traction supply infrastructure (the catenary) and the charge for traction current itself. This section will look at the supply of traction current itself. Firstly, it is important to note that we were not able to obtain information about the structure and level of charges in some networks either through the Network Statement or through direct contacts with the relevant infrastructure manager. In the case of some networks, such as Norway and Finland, the charge was incorporated within the overall minimum access charge, and as a result is not very transparent.
- 5.130 We were able to obtain some information on the various charges and these are included in the table below.

TABLE 5.4 ELECTRIC TRACTION CHARGES

Network	Charge in Euro	Parameter	Notes
Switzerland	0.0451 – 0.0709	Per KWh	Minimum and maximum tariff but variable according to time of day and rolling stock used
Germany	0.0776 – 0.1146	Per KWh	Base tariffs not including any surcharges or discounts for regenerative supply
France	0.082 – 0.454	Per train km	Range depends on the service that is run (high speed passenger, freight, etc.)
Great Britain	0.03 – 0.25	Per KWh	Range depends on the time of day, the period in the year and the geographical zone
Italy	0.332	Per Km	Unitary value to be multiplied by the distance travelled on the various sections of track.
Luxembourg	0.0196	Unit charge	To be multiplied by a number of variables to get to the electricity charge
Netherlands	0.02996	Per KWh	
Portugal	3000	Per month	This is an intermediation charge as the infrastructure manager does not provide the electricity directly
Spain	1.903 – 5.997	Per train km	Split by commuter, regional and long distance services with a 5% surcharge for management costs
Sweden	0.0125	Per KWh	

Source: Network Statements and infrastructure managers

- 5.131 As with the other services we have discussed above, it can be seen that there is substantial variation in the parameters that are used to charge for electric traction, making comparison somewhat difficult. Looking at the per KWh charge, the most expensive seems to be the charge for Great Britain at peak time, in winter in a commuter area, while the cheapest is the charge in Sweden.
- 5.132 As can be seen from the above table, some networks have opted for an extremely variable charging structure, with different charges according to the type of rolling stock, the location, the distance travelled and other parameters. Apart from the ranges shown above, this is also true within the Italian, Belgian and Austrian charging structure.
- 5.133 It is important to note that the absence of information for so many networks in the table above, clearly indicates the prevalent lack of transparency in charging for traction electricity, which as a result, may lead to discrimination between operators within the various networks. Whilst some price differentials may appropriately reflect current objective differences in the cost of service provision, the differences are also likely to reflect historical factors in some cases, deriving from previous settlements and agreements with the national energy provider. For example, an Italian stakeholder mentioned that the price of electric traction in Italy is lower than that in other networks as a result of an agreement struck between the Italian railways and the national energy company when the rail electricity generation facilities were transferred to the national energy company.

Stabling in storage sidings

- 5.134 We were able to identify the charge for stabling rolling stock in the facilities of the infrastructure manager in a number of networks. They are shown in the table below.

TABLE 5.5 STABLING CHARGES

Network	Charge in Euros	Parameter
Austria	2.60	Per day
Switzerland	0.65-1.93	Per day
	14.45	Between 1 and 6 hours
	1.90	Every hour between 6 and 12 hours
Spain	2.80	Every hour between 12 and 24 hours
	36.00	Whole day
	53.29 + VAT	Per KM of siding & per month
France	10.83 + VAT	Per event > 1 hour
Luxembourg	2.67	Per day
Netherlands	14% surcharge on the train *km tariff	
Portugal	11.00	Per day
	0.15	Per hour (in CFR storage sidings)
Romania	1.65	Per wagons per day (in non CFR sidings)
	4.60	Per rolling stock per day (in non CFR sidings)
Sweden	0	Per day
Slovenia	2.00	Per day per vehicle

Source: Network Statements and infrastructure managers

- 5.135 The first point to note is the fact that, as in the case of the other services discussed above, a number of networks do not publish their charges for stabling, while others include it in the tariff for their minimum access package. Furthermore, as in the case of other rail-related services discussed above, the parameters that are used to levy charges for stabling vary significantly between networks: in the case of Romania, they also vary within a network, as CFR sidings are charged by the hour while non CFR sidings are charged by the vehicle used and by the day.
- 5.136 Taking as an example those networks that have a daily charge, it can be seen that the charges vary from zero Euros in Sweden where the charges are part of the basic access tariff, to €36 in Spain. Given the values found in the remaining networks shown above, it seems that both of these values are significant outliers.
- 5.137 Not included in the list above is the situation for Germany, since we have not been able to obtain the charges for stabling on the DB network. We are aware, as mentioned in the stakeholder analysis above, that the Federal Networks Agency is looking into charging for stabling on the DB network, following some complaints.

Summary of price analysis

- 5.138 Given that the majority of the charges are variable depending on one of a number of parameters, it can be assumed that in most cases they bear some relation to the cost of actually providing the service; however the wide variation that we have found in the small number of charges that we have been able to obtain makes it difficult to undertake a sensible benchmarking exercise on the cost of performing these services.
- 5.139 Indeed, given the fact that, to a significant extent, the services are homogeneous between networks except for labour costs, it is difficult to understand the observed variation in the level of charges. It is also difficult to see how some of the operators of facilities or the providers of services are effectively recovering the relevant cost of undertaking the service – especially those who have set minimal charges. In this context, our stakeholder discussions point to there being very little effective knowledge of whether the entire costs of service are being recovered.
- 5.140 In those networks where we have not been able to obtain direct costs and charges for the provision of such services, we have been informed by some respondents (particularly prospective new market entrants) that the prices for the services offered either by an incumbent operator or by the relevant infrastructure manager are up to three times the cost of undertaking the service in-house. This was explained in relation to the difference between the cost of providing marshalling services in-house, and the prices charged by the service provider, in this case the incumbent operator. This is a problem that is prevalent in Eastern European countries where there remains one dominant supplier, but there are examples of similar situations in markets where there are a significant number of new entrants.
- 5.141 A large majority of stakeholders have expressed concern about the transparency of charges for access to rail-related services, seeing this as more problematic than the level of the charge itself. In the countries where the charges are very high, the operators have explained that they can usually find a way to factor the cost into their activities: a bigger problem occurs when stakeholders have no way of knowing the outturn price of the service with any reasonable level of accuracy, thus limiting their ability to develop a business case for launching a service, based on a credible business proposition made to a client. This lack of transparency is one of the key issues that must be resolved as a priority.
- 5.142 If the first milestone is an improvement in the transparency of access charging and service tariffs to better inform prospective users, the second step must be to increase in the cost reflectivity of the charges for services, to better incentivise both the facility provider and the facility user. Networks where similar or identical basic charges apply to a large number of different services (for example Luxembourg), do not appear to exhibit a high degree of cost reflectivity in their charging structure. The same concern is true, if the charges are identical in more than one network.

Summary of the current situation

- 5.143 We have mentioned above that the majority of stakeholders stated that any problems that they were encountering were teething problems that would hopefully be resolved soon. It is important to point out that the analysis that we have undertaken in this chapter, and in particular the information that we have received with regard to the competition and regulatory complaints, does not show the entire picture: there are a number of networks where the only current rail operator is the incumbent; in these networks, problems of competitive access to rail-related services will only develop when market opening has been implemented, and when there has been actual new entry, or substantive potential new entry onto the network.
- 5.144 On a number of networks, the provider and operator of some rail-related services (mainly freight terminal facilities) is a third party private company, that negotiates both tariffs and conditions for access with each party and, as such, does not publish any information or is unwilling to provide standard prices or details of its conditions of access. In practice, these facility providers may already be working in a competitive environment, and in the majority of such cases, the private facility operator is motivated primarily by the wish to ensure a steadily growing income, and as such, would not find it in its best interest to discriminate between any of the industry participants. However, the competitive circumstances applying to major facilities operated on a private basis should always be verified, to avoid the risk of geographical monopolies being established. There may also be an argument that some of the information mentioned above (such as opening times and capacity but excluding price lists) should be made public in any event, so as to facilitate business development initiatives and reduce the administrative costs of access applications.

6. LEGISLATIVE ANALYSIS

Introduction

6.1 This chapter sets out our analysis of the legislative framework that is fundamental to the effective functioning of the market in rail-related services. This analysis builds on the exercise previously undertaken for the Interim Report, providing a more detailed review of various provisions of national and international legislation. The sections below will focus on the cross-country analysis, including some key examples. However the details of the individual networks reviewed can be found in Appendix A.

6.2 The subjects included in this chapter are the following:

- Hypothesis testing for the level of implementation;
- Review of legislation against fitness of purpose hypothesis;
- Completeness of EU legislation;

6.3 The need for action will be discussed in Chapter 7.

Hypothesis for testing the level of implementation

6.4 In order to evaluate whether the legal concepts and frameworks currently in place can be adjudged to be ‘fit for purpose’, we have reviewed:

- Whether the relevant Directives have been transposed into national law;
- Whether the requirements of the relevant Directives have been reproduced correctly in the national Network Statements;
- The existence of other (specific national) legal factors and provisions that may affect the development of rail-related services.

6.5 These criteria are based on our experience in the rail sector and in other industry sectors where a robust legal framework is required to enable an effective market to develop.

Review of fitness for purpose

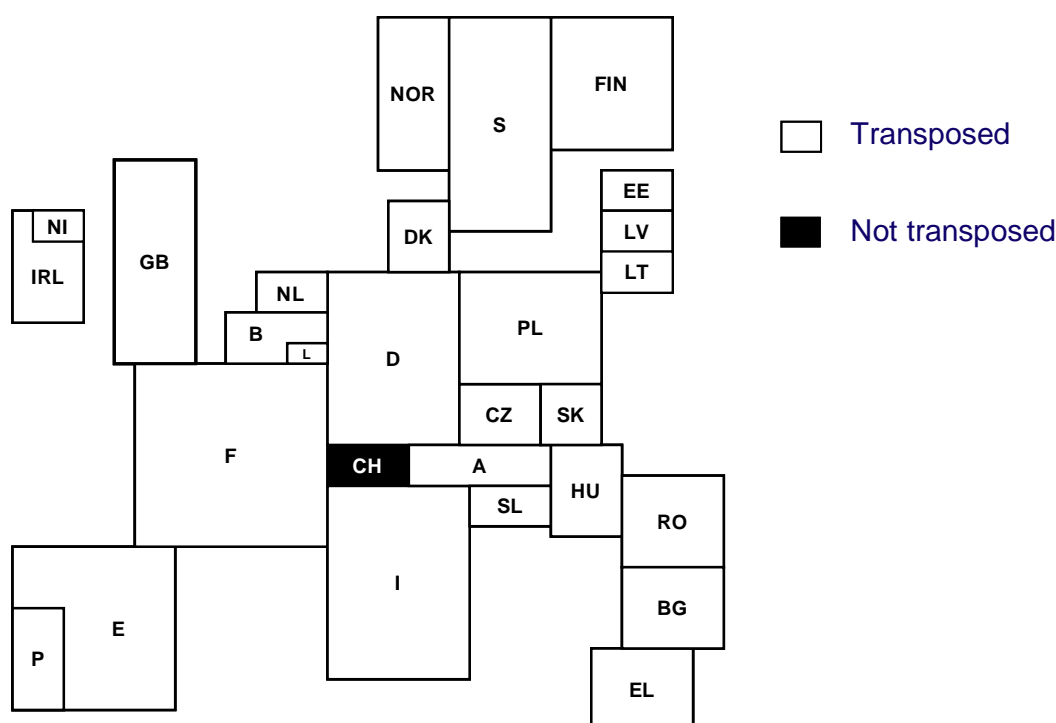
Transposition overview

6.6 Before going further in this study, it is worth distinguishing between the terms transposition and implementation. According to the legal terminology, we assume that a directive is transposed when its content is integrated into the national law. We adopt

the term implementation to refer to the more comprehensive process that comprises the initial transposition steps, and additionally, includes the effort made by Member States to produce further national legislation and regulations in order to ensure day to day adherence to the principles expressed.

- 6.7 Member States are required to incorporate the legal requirements relating to non-discriminatory access to rail-related services into national law through the transposition of Directive 2001/14/EC. The table below sets out those countries that have transposed this Directive.

FIGURE 6.1 TRANSPOSITION OF DIRECTIVE 2001/14/EC



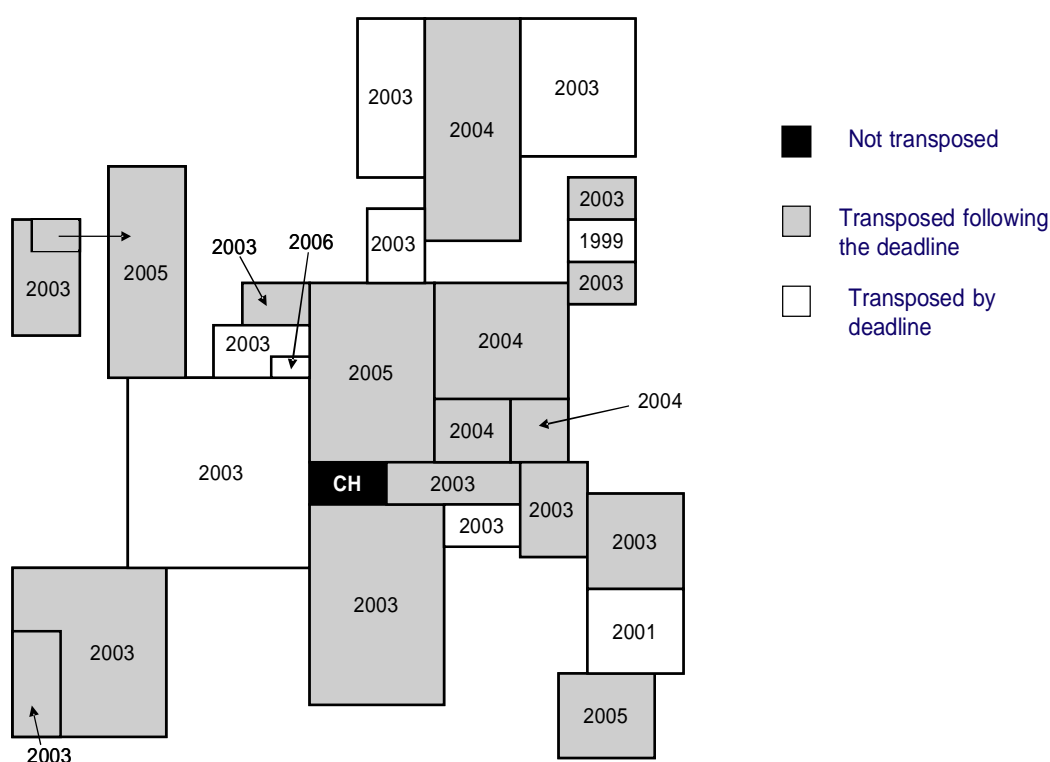
Source: Steer Davies Gleave analysis

- 6.8 It can be seen from the diagram above that all the networks have transposed Directive 2001/14/EC with the exception of Switzerland, which -though outside the European Union and the European Economic Area- signed a Land Transport Agreement with the European Community in 1992 granting reciprocal access to the transport markets of each Contracting Party. According to the terms of a subsequent revision in 2002, the Contracting Parties to the Land Transport Agreement also aim to liberalise access to each other's transport markets, to encourage the more efficient carriage of passengers and goods by road and rail.

- 6.9 The implementation process of the Directive 2001/14/EC has been a gradual one and, whilst the official deadline to implement the law was 15th March 2003, the

transposition has only occurred recently in a number of Member States. This phenomenon is shown in the figure below, which differentiates between countries according to their timing of the transposition of the Directive.

FIGURE 6.2 THE GRADUAL TRANSPOSITION PROCESS FOR DIRECTIVE 2001/14/EC

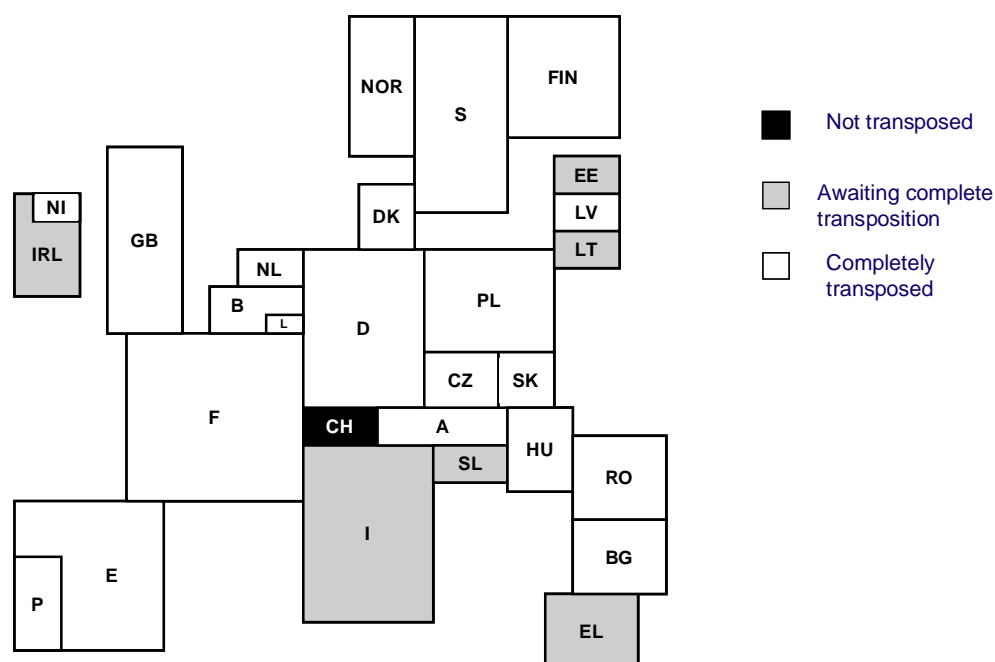


Source: Steer Davies Gleave analysis based on technical appendix

- 6.10 In a large number of Member States, the national implementation legislation has simply taken the text of the relevant EU Directive and transposed it into domestic law, without adding any further details to clarify the national requirements. While this may be beneficial to public institutions in ensuring that transposition targets are met, it does not provide the infrastructure manager (or the other suppliers of rail-related services) with any guidance on how to apply the national law, nor does it give the prospective users of rail-related services any form of certainty as to the way in which the law will be interpreted when access to these services is sought. Clear examples of this can be seen for example in Italy, where the EU Directive was transposed in July 2003: however, many of the details relating to rail-related services remain to be published in a subsequent Ministerial Decree that has not as yet been issued.
- 6.11 Furthermore, of the countries shown above that have transposed the Directive, there remain some that have yet to implement a part, or all, of the details of the legislation with reference to rail-related services. There are also some where the national transposition laws specify that the relevant Ministry needs to publish further decrees in

relation to certain rail-related services. In those cases, the network is not yet fully compliant with the requirements of the Directive. The figure below sets out those networks that are not fully compliant; more details on the reasons for this can be found in the Technical Appendix.

FIGURE 6.3 INITIAL ASSESSMENT ON FULL IMPLEMENTATION OF DIRECTIVE 2001/14/EC



Source: Steer Davies Gleave analysis based on technical appendix

- 6.12 If the cases mentioned above reflect the limited willingness of national legislators to introduce the additional legislation and regulation that is needed in order to fully implement Directive 2001/14/EC, there are also other cases in which the day-to-day operation of the rail industry reveals a gap in the regulatory framework of the national railway sector. The prime example of the discrepancy in the interpretation of national and international law is in Belgium, where an international staff leasing company has not been allowed to provide staff to work on the national network as it does not have a licence, and it is unable to obtain a licence because it is not a railway undertaking as defined by the provision of traction.
- 6.13 The full definition of a railway undertaking as set out in the Directive is: "...any public or private undertaking, licensed according to applicable Community legislation, the principal business of which is to provide services for the transport of goods and/or passengers by rail with a requirement that the undertaking must ensure traction; this

also includes undertakings which provide traction only.”⁹

- 6.14 This definition is focused solely on those sections of the industry that intend to run trains on the network; it does not encompass those undertakings that wish to provide ancillary services to stakeholders in the rail industry. A provider of rail staff for leasing is no more a railway undertaking, than is a company that provides training for drivers, or a company that solely operates and manages stations.
- 6.15 As a result, it is not appropriate to licence these businesses as railway undertakings, and in the case of Belgium there should be no impediment to the provision of staff leasing services. Furthermore, it is apparent that the problematic national interpretation is not derived from European rail legislation.
- 6.16 The leasing of staff is also a problem in Italy, where legislation currently requires that drivers licences be tied not only to the individual, but also to the operator that the individual is working for. This requirement means that, by definition, the leasing of staff is not allowed, and is thus a significant barrier to entry, as training facilities are needed for all operators. Furthermore, this implies that labour mobility within the industry is almost impossible, as the transactions costs incurred in moving from one company to another are very high. There is also a similar problem in relation to staff leasing in Slovakia.
- 6.17 In Germany, we have seen (in paragraphs 0 and 5.25) that national regulations in relation to diesel fuelling limit the locations at which this activity is undertaken. This represents an important barrier for third party operators on this network. While restrictions may be desirable and necessary for environmental reasons, limiting diesel fuelling services to sites where the facility owner is DB means that other operators face added costs, since they must pay for a service that they might otherwise provide at their own (approved) facilities.
- 6.18 Also in Germany, Chapter 5 discussed the appeal and subsequent decision in relation to traction electricity, and the fact that the most recent decision seems to permit discriminatory pricing in the provision of traction electricity between the incumbent and new entrants. This is clearly against the principles of an open and liberalised market, and reinstates significant barriers to entry into the market. Furthermore, it can be argued that this decision does not conform to the requirements enshrined in Directive 2001/14/EC. Putting to one side for the moment the overarching principle of equality and non discrimination, Article 8, paragraph 3 clearly states that charges for the use of infrastructure and services in the same market segments should be equal. Furthermore, Article 9 states that discounts can only relate to specific infrastructure sections. Finally, as mentioned above, Article 7 states that the charges for ancillary

⁹ Directive 2001/14/EC

services should relate to the cost of actually providing the services, which, in the case of electricity is unlikely to vary by 7-8% between two operators. Therefore, not only does the decision go against the principles of the Directive, it seems to also contravene the actual requirements as enshrined in the Articles mentioned above.

- 6.19 In several countries, our analysis has demonstrated that the lack of regulation in relation to rail-related services, with particular respect to charging policies and access to service facilities, represents a barrier to network access. Some Rail Regulators have specified that these issues are, however, quite difficult to regulate effectively, because of the lack of practical skills and the number of institutions involved in the industry.
- 6.20 These questions point to the fact that the implementation process is a slow one, and that completion requires not just the transposition of the contents of the Directives, but also the activation of other processes. Our analysis of legislation has sought to cover all the specific country issues that have arisen from our research; however, the fact that the market does not yet exist in a number of cases, means that potential operators have not been able to test the relevant local legislation to identify limitations and problems.

Network Statements

- 6.21 In order to reduce the national regulation gap in terms of full implementation of the Directives, national infrastructure managers in a number of countries have taken on the role of defining these requirements in more detail, by including substantial additional information in their respective Network Statements. However, this information is not always complete and is still subject to private negotiations and agreements, and is thus not fully transparent. It is important to note that this is true not only in networks that are just starting the liberalisation process, but also in those that are in an advanced stage of liberalisation.

Network Statement requirements in EU directive

- 6.22 The analysis in Chapter 5 relating to the various parties providing rail-related services demonstrated that the situation is very different across the range of networks reviewed, with some of the services being provided by the national infrastructure manager, some by the incumbent rail operator, some by all the operators, and some by independent public or private bodies.
- 6.23 Although the concept of the minimum access package is included in all the networks we have analysed, as required by Directive 2001/14/EC, our analysis has shown that individual networks include different categories of services within the overall package of services offered. The services included in Annex II are divided into 4 categories:
- Minimum access package: All operators must have non-discriminatory access to

this range of services;

- Rail-related facilities: All operators must have non-discriminatory access to these facilities, and the supply of services in these facilities can only be rejected if there is a suitable alternative;
- Additional services: Infrastructure managers shall supply these additional services if the operator requests these services; and
- Ancillary services: Infrastructure managers may supply these ancillary services if the operator requests these services.

6.24 Furthermore, for the last two of these, whenever infrastructure managers supply these services following a request from an operator, the Network Statements have to be transparent and non-discriminating and the infrastructure managers are obliged to grant access also to the additional and ancillary services in a non-discriminatory way

6.25 The table below sets out the categorisation for the various services across the networks compared to the categories set out in Annex II of Directive 2001/14/EC.

TABLE 6.1 SERVICE CATEGORISATION ACROSS THE NETWORKS

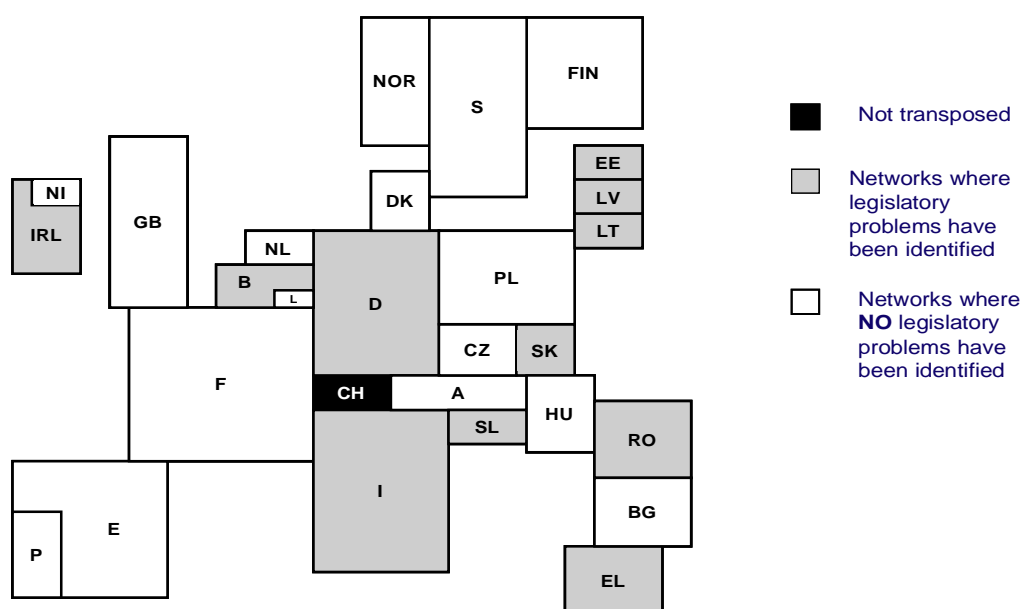
Legend:																		
ü = in Network Statement in the same category																		
x = not supplied by IM																		
1 = Included in 1 st category																		
2 = Included in 2 nd category																		
3 = Included in 3 rd category																		
4 = Included in 4 th category																		
Blank spaces=unavailable																		
Services to be supplied to railway undertakings		Austria	Belgium	Bulgaria	Switzerland	Czech Republic	Estonia	Spain	France	Italy	Luxembourg	Latvia	Poland	Portugal	Romania	Slovenia	All others*	
1. The minimum access package shall comprise	a) handling of capacity requests	ü	ü	ü	ü		ü	ü	ü	ü	ü		ü	ü	ü	ü	ü	
	b) the right to utilise granted capacity	ü	ü	ü	ü		ü	ü	ü	ü	ü		ü	ü	ü	ü	ü	
	c) use of running track points and junctions	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü		ü	ü	ü	ü	ü	
	d) train control including signalling, regulation, dispatching & information on train movement	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü		ü	ü	ü	ü	ü	
	e) all other information required to implement/operate the service for granted capacity	ü	ü	ü	ü	ü	ü	ü	ü	ü	ü		ü	ü	ü	ü	ü	
2. Track access to services facilities and supply of services shall comprise	a) use of electrical supply equipment for traction current	ü	ü	1	ü	1	ü	ü	ü	1	ü	3	ü	ü	ü	ü	ü	
	b) refuelling facilities	ü	ü	1			ü	ü		ü	ü		ü	ü	ü	ü	ü	
	c) passenger stations, their buildings & other facilities	ü	ü		ü	1	ü	1		ü	ü	3	ü	ü	4	ü	ü	
	d) freight terminals		ü		ü		ü	ü		ü	ü	3		ü	ü	ü	ü	
	e) marshalling yards	ü	ü	1	ü			3	ü	ü	ü		ü	ü	ü	ü	ü	
	f) train formation facilities	ü	ü	1	ü		ü	ü			ü	ü		ü	ü	ü	ü	
	g) storage sidings	ü	ü				ü	3	ü	ü	ü			ü	ü		ü	
	h) maintenance and other technical facilities		ü	1			ü	ü		ü	ü	ü		ü	ü	ü	ü	
3. Additional services may comprise	a) traction current		ü	ü		1	4	ü	2	ü	ü	ü	ü	ü	ü	4	ü	
	b) pre-heating of passenger trains	ü		ü		1	4	ü		ü	x	ü	ü			4	ü	
	c) supply of fuel, shunting, & all other services provided at the facilities mentioned above	ü	x	ü			4	ü	2	ü	ü	ü	ü	ü	4	ü	ü	
	d) tailor-made contracts for the transport of:																	
	dangerous goods		x	ü		ü	4	ü	ü	2	ü	ü	ü		ü	ü	ü	
	abnormal trains		x	ü		ü	2	ü	ü	2	ü	ü	ü		ü	ü	ü	
4. Ancillary services may comprise	a) access to telecoms network		ü	ü			ü	ü	3	2		3	3	ü	ü	4	ü	
	b) supplementary information		x	ü	3		ü	ü		ü		3	3	ü	ü	4	ü	
	c) technical inspection of rolling stock	ü	x	ü	ü		ü	ü				3	2			4	ü	

*Source: Steer Davies Gleave analysis, Network Statements and Directive 2001/14/EC. *The data for Ireland, Northern Ireland and Lithuania was not available. All Others refers to those networks where the categorisation is fully compliant.*

- 6.26 For this analysis we have used the information published in the Network Statements of the various networks under review: where there is no Network Statement as yet, the table refers to the national legislation. We have used the contents of the national Network Statements as the aim of these Statements should be to provide a comprehensive and authoritative reference document.
- 6.27 As can be seen from the figure above, all but 2 of the networks (Czech Republic and Latvia) incorporate the requirements of Directive 2001/14/EC in relation to the minimum access package. However, in contrast, the categorisation of the remaining rail-related services is very varied, with certain elements (such as the use of electrification equipment in Italy) being included in the minimum access package, some being included in the services that must be provided on a non discriminatory manner (such as the running of abnormal trains in Estonia), while others are lower down on the priority scale (as is the case with storage sidings in Spain).
- 6.28 While the inclusion of additional elements in the minimum access package can be seen as beneficial to operating companies applying for access, it is also true that bundling such activities in this package could potentially lead the costs and charges of the infrastructure manager (or other service provider) to increase above the costs of equivalent service providers on other networks; it may also be that new entrant operators do not require, or wish to utilise, the additional ‘bundled’ elements in question. On the whole, the aim of moving such services up to a higher categorisation (taking the table above as a reference point), is to increase the importance of that service within the overall access framework, and to ensure that the infrastructure manager is incentivised to provide these services in an efficient manner. But, reflecting the point made earlier in this paragraph, some stakeholders have also mentioned that they would prefer that additional elements of service should not be given a higher level of importance; for example, to enable them to freely negotiate their traction electricity contracts on an individual basis.
- 6.29 On the other hand, the fact that some of the services are considered to be lower down the priority scale can potentially be problematic for operators applying for access, as they may have to find other sources of supply for these services, or undertake the activities themselves. This may, of course, be to the ultimate advantage of the applicant, as it may be possible for a new entrant operator to undertake the service in-house in a more economical manner than the incumbent provider. But this still involves set-up costs and may act as an initial entry barrier; negating a mechanism that was set up to reduce barriers in the provision of these services.
- 6.30 Where differences occur as a result of a service being lower down the priority scale than is prescribed or envisaged in European rail legislation, it is important to rectify the situation by applying the correct categorisation to the services concerned; this will ensure that compliance with the Directive is complete. It is hard to justify such inconsistencies as there are clear guidelines within the Directive on the ways in which rail-related services should be categorised and offered. These guidelines should be

enforced and respected on each rail network (and enhanced in terms of scope and detail, if required) so that a potential operator can easily establish the services to which he has a right, those whose provision is obligatory on request on a non-discriminatory basis, and differentiate such services from those that need only be offered on a discretionary basis.

- 6.31 Looking at Table 6.1 above, it can be seen that those Network Statements that are not compliant with the requirements of the Directive, in that key rail-related services are given a lower position in the priority scale, comprise the following:
- Switzerland;
 - Estonia;
 - Latvia;
 - Romania; and
 - Slovenia.
- 6.32 Following from the transposition into national law mentioned above, we found that in the majority of networks reviewed, the references to rail-related services included in the relevant rail industry documentation (including the Network Statements), reiterate the contents of the national legislation, and do not always provide further detail on the requirements for providing access to these services. This is true both in respect of the conditions for access, and for access charging. Without detailed information on these requirements, rail operators are likely to face difficulties in planning their businesses effectively, as mentioned earlier. The figure below sets out those networks where action needs to be taken with respect to national legislative problems, or problems with the manner in which the laws have been applied within the Network Statement.
- 6.33 As a result, taking account of the findings in the sub-sections above, we can recast Figure 6.3 to identify those countries where the framework of national legislation does not seem to point to any intrinsic problems that could potentially cause further barriers to entry and access to rail-related services, as well as identifying those where substantive problems may exist. This is shown in the figure below.

FIGURE 6.4 ANALYSIS OF LEGISLATION PER COUNTRY

Source: Steer Davies Gleave analysis

Completeness of EU legislation

Viable alternative

- 6.34 One point of discussion related to Article 5 of Directive 2001/14/EC remains the “viable alternative”. This can have a different meaning for different parties: a large, incumbent operator may, as a result of its network effects, consider a facility located some distance away to be a viable alternative to an existing facility, whilst a smaller new entrant would judge such an alternative location to be too distant to be viable. The establishment of criteria for, and definition of, a “viable alternative” are needed. Without wishing to label these facilities as essential facilities, or as essential services that should be included in the minimum access package, the more detailed definition of a viable alternative is essential to ensure that there is more transparency in the access regime, and to provide clarity on the rights and obligations of the parties negotiating the procurement and supply of such services and facilities.
- 6.35 Furthermore, in practice, the definition of a viable alternative should reflect actual access conditions within the specific network in question. Returning to the example of diesel fuelling points as described above, in Italy, the viable alternative to fuelling at the infrastructure of the incumbent is to fuel with mobile tanking units through the “self-supply” principle, which is likely to be a feasible solution. On the other hand, in Germany, where refuelling is allowed only at a restricted number of locations, that in recent years has diminished substantially (see the Germany chapter in Appendix A), there may not be a viable alternative for the fuelling of rolling stock used by a non-

incumbent operator, since alternative sites may involve the rolling stock travelling excessively long distances.

6.36 A balance needs to be struck between:

- the wish and requirements of the incumbent operators (who in some cases operate the facilities);
- the financial constraints imposed on the infrastructure manager, in whose interest it may be to reduce the number of facilities provided; and
- the requirements of a new entrant to be able to develop a viable business offer.

6.37 During the implementation of the First Package of Directives in the UK, a wide-ranging consultation was undertaken, looking amongst other things, at the viable alternative principle. A Department for Transport consultation report¹⁰ sets out a number of areas that consultees believed needed to be taken into account when setting the parameters for the use of the viable alternative principle:

- Are there effectively alternative options;
- What are the reasons that have been provided by the party refusing access to the applicant's 'first choice' of facility or service provider;
- Have they applied any relevant prioritisation criteria;
- Are there any suggestions of unfair practices;
- The criterion for defining an alternative option should ensure that the applicant can achieve broadly the same outcome, using its current resources; and
- The alternative facility or service provider should have spare capacity available.

6.38 This consultation initiative was followed by the Office of Rail Regulation (ORR) document "Appeals under the Railways Infrastructure (Access and Management) Regulations" where the viable alternative issue is discussed in detail:

- "[ORR] will consider arguments made on a case-by-case basis but examples of the type of objective justification which might justify restricting access or a refusal to grant access could include:
 - § **non-availability** of capacity;
 - § refusing to deal with applicants of **poor repute** (on financial or safety grounds);
 - § imposing restrictions or refusing access on the basis of **sound, non-discriminatory safety and security requirements**;
 - § imposing **reasonable restrictions designed to ensure efficient utilisation** of the facility or improve performance; and/or

¹⁰ First Rail Package: Consultation Report. Department for Transport November 2005

§ imposing restrictions reflecting the **technical limitations of the site or approaches to the site** (e.g. capacity constraints on railway network approaching a port or terminal).”

- “The normal rules in relation to competition and pricing apply to rail service facilities as they do to other sectors of the economy. If access is being denied, or restricted, to a facility or service that is essential in competition law terms, then the prohibitions contained in Chapter II of the Competition Act 1998 and Article 82 of the EC Treaty (abuse of a dominant position) may apply.”
- “...[ORR] will expect the facility owner to have provided an objectively argued case as to the existence of a viable alternative to the applicant prior to refusing access or imposing restrictions. We will also expect the applicant in making a request for access to have specified precisely its requirements for access into a particular facility (see Chapter 5). This information would enable the facility owner to take a view on the relevant downstream service against which alternative facilities can be tested. If the applicant cannot switch to another facility without a material increase in its costs, or if other rail facilities that potentially could meet its requirements are not available, then the burden of proof on the facility owner will become more onerous. We will expect to see this information as a key element of the documentation for any appeal.”

6.39 The document goes on to explain how the ORR would expect the viable alternative to be assessed:

- Through physical viability (whether there is an alternative site that is operationally or logistically capable of replicating the facilities of the installation);
- Commercial viability (that it should not impose a material increase in cost in terms not only in terms of the price of access to the facility, but all relevant costs);
- Availability (other facilities may not be available as a result of prior or simultaneous refusals); and
- Self supply (where the operators could provide the services on their own if the capital costs and other set-up expenses are low).

6.40 It can be seen, therefore, that one network has sought to define the viable alternative issue further, in a manner that provides operators and facility owners with some certainty in relation to the way in which any possible complaint or request for access will be dealt with.

6.41 Although this approach has provided a degree of certainty to market participants, the ability to limit access because a facility is full, or because the operator requiring access is not of good repute, does not necessarily fit with the requirements of Article 5 and can be seen as being non-compliant with the requirement of the Directive.

6.42 Our research into this subject has not identified any cases or decisions that have specifically called into question or used the viable alternative principle. This does not mean that this provision may not be used in future, and it may become a point of

contention.

- 6.43 In practice, the viable alternative concept can only be developed and applied following jurisprudence, regulatory body or Commission guidelines that define the circumstances and limits of applicability in the eyes of national and international tribunals. These bodies, and possibly the Commission should endeavour to formalise the meaning and the context of the viable alternative principle, taking as a starting point the approach that has been adopted by the United Kingdom and shaping it, through the preparation of explanatory guidelines. Such guidelines will aid the Member States in being able to assess the applicability of the principle.

Other issues in EU legislation

- 6.44 There is a clear distinction between the access to the track in the facilities, and the access to the facilities themselves. While in principle this separation needs to be maintained, in practice it may not be optimal for an operator to enter the facility but not be able to use it. One incumbent operator mentioned to us that there is free access to their facilities, and that anyone is allowed to access their facilities, but that they are not allowed use any on-site services when they have obtained access. This is clearly against the principles of the Directive, and leads to a sub-optimal market situation. In this specific case, no other operator has requested access to the facilities or the services within these facilities as yet, the moment they do this approach will probably be challenged.
- 6.45 A number of the services that fall under the auspices of Article 5 of the Directive are not actually provided by the infrastructure manager, but are provided by either independent private or public bodies, or by the incumbent rail operating companies as shown in Chapter 3. This is as a result of historical national policies and different approaches to rail industry restructuring and privatisation. The legislation specifically refers only to the infrastructure manager being obliged to provide these services, and not to other industry participants that are not part of, or linked to, the infrastructure management entity. The legislation should be revised to reflect the fact that there are other significant private or public entities that should have similar obligations to infrastructure managers, if they are the only providers of rail-related services and facilities, in situations where it would not be a viable alternative, or operationally efficient, for each operator to provide the service on an individual basis. However, any revised legislation should focus on the basic obligation to supply services and make facilities available in the absence of viable alternatives, rather than imposing obligations on specific categories of service provider and rail-related service or facility. If supported by appropriate documentation from a regulatory body providing clarification and guidance on the criteria used to assess viable alternatives, as in Great Britain, this would represent a flexible legal provision, reflecting the fact that the market in rail-related services and facilities is still in transition. The obligations imposed by the legislation would be relaxed where increasing competition between railway undertakings stimulated competitive responses from public or private service providers that broaden the range of viable alternatives available (e.g. in the provision

of rolling stock maintenance facilities or cleaning services. On the other hand, the legislation would still facilitate market entry and protect users where geographical, technical or legislative constraints effectively precluded the development of viable alternatives (e.g. in the use of electrical supply equipment for traction current; access to specific freight terminals.)

- 6.46 As mentioned above, Article 5 states that “If the services are not offered by one infrastructure manager, the provider of the “main infrastructure” shall use all reasonable endeavours to facilitate the provision of these services.” In this case the role of the infrastructure manager is extremely important in relation to the gathering of rail-related information. The infrastructure manager should be the coordinator of all the relevant data and information, and should bring all the information together within the Network Statement.
- 6.47 It is clear that information that is included in the Network Statement, but is sourced from third parties, will only be a snapshot of the information that is available with regards to access to third party facilities. It would not be the responsibility of the infrastructure manager to keep the information updated on a continuous basis (other than in the regular annual updates of the Network Statement) as it is not related to its business, but to the activity of another operator. The information provided in relation to services that are outside the control of an infrastructure manager should be accompanied with up-to-date contact details for the relevant facility manager, from whom further current information can be obtained, thus limiting the “information loop” set out in Chapter 5.
- 6.48 Our information points to there being limitations on the possibility of the infrastructure manager being legally responsible for the information that it provides in respect of third party infrastructure and facilities, but in some Member States, the Network Statement is a legally binding contract under the relevant national laws, and as such, the inclusion of such information would legally bind the infrastructure manager. To solve this problem, the optimal approach would be to produce a supplement to the Network Statement to be published in conjunction with the main document that contains the relevant information on third party facilities and/or their contact details. This would need to be accompanied by a clear disclaimer on the part of infrastructure manager related to the information it provides with reference to third party facilities and services. Such a supplement, with the disclaimer, would not bind the infrastructure manager to the contents of the document, but would fulfil one of the main goal of the liberalisation process -that is, to increase information transparency in the market, particularly in relation to rail-related services.
- 6.49 We have been informed that in some cases, the list of services does not go far enough, in that it does not specifically refer to such things as water replenishment for rail passenger cars, something that stakeholders in Italy point to as being important (which has been included in the RFI Network Statement). It also omits access to training facilities both for drivers and technical staff: as has been shown above, this has been a problem in some networks, and is probably one of the prime candidates for open

competition given the experiences in Great Britain and in some other networks.

7. EXPECTED DEMAND AND SUPPLY PATTERNS

Introduction

- 7.1 This chapter explores the likely demand and supply patterns taking into consideration the comments that we have received in the stakeholder analysis, our analysis of the access conditions across Member States, the legislative environment and other important factors such as the development of railway infrastructure, and the expected future pattern of relationships within the European rail industry.
- 7.2 Taking the stakeholder analysis mentioned above into consideration, we can see that the predictions for some of the services included in the forecasting chapter may turn out to be optimistic if the problems identified are not resolved. The majority of the information we have received during the stakeholder phase is directly linked to the issues of whether access to rail-related facilities or services will continue to be affected or impeded by the behaviour of incumbent operators, or by other market conditions. The analysis in this section will seek to bring together the analysis done to date, into a complete and coherent review of the likely market evolution. Where we have not identified any specific problems, either through the stakeholder analysis or through our access conditions analysis, we have assumed that supply is likely to build up in response to demand, and that demand will follow the general trend of freight and passenger traffic volumes.
- 7.3 As we have mentioned above, some networks have not encountered any problems, either due to their location or to derogations applying specifically to them, but this does not mean that there are no intrinsic problems in the manner in which the rail markets in these countries are structured: it could, instead, simply reflect the fact that the liberalisation process has not advanced sufficiently to identify institutional, economic or behavioural limitations. For each service included below, we will assess the current market structure and the possibility of a market developing in the provision of each service, or in the provision of access to the types of facilities under review.

Electricity for traction

- 7.4 Chapter 4 showed that there is likely to be an increase in demand for electric traction, as a result of the overall increase in passenger and freight services and the electrification of more lines. We have seen that there have been certain problems in the provision of traction electricity in Germany, mainly related to the prices for this service and to the supply of the on-train equipment required; but this should not have an effect either on the demand or on the supply of traction electricity, which should be sufficient to meet the needs of operators.

Market structure and potential

- 7.5 Currently the market for electricity for traction is in a state of flux as liberalisation of the electricity industry takes shape. Other than in Germany, operators in all networks do not currently have the ability to buy traction current from third parties. In the UK, for example, where the electricity supply industry is completely liberalised, there is currently no equipment installed on rolling stock, or any other technical or administrative provisions, to allow train operators the scope to buy electricity from providers other than from the infrastructure manager: the Office of Rail Regulation is currently evaluating the introduction of such equipment and provisions.
- 7.6 The procurement of traction electricity from competing sources of supply is likely to drive down the cost of electric traction in the long-run, as competition -and potentially the establishment of a single European electricity market- mean that providers of electricity can sell their product to rail operators all over Europe. The resulting fall in cost may also have a beneficial effect on intermodal competition.
- 7.7 The development of this market likely to occur more rapidly across international borders than domestically: this is shown by the example described in Chapter 5. E.ON is less likely to want to alienate DBAG, its major rail customer in Germany by selling directly to other operators nationally, than it is to offer traction electricity to operators in other countries where it does not currently have a relationship with a large rail customer.
- 7.8 It is important that the distribution network for rail traction electricity remains in independent hands (either belonging to the railway infrastructure manager or to a separate distribution company.) This will ensure that the competitive benefits of liberalisation are maintained, as well as ensuring that the core responsibility for electric traction asset maintenance is undertaken by an entity that is most capable of assuring it effectively and efficiently, and that recognises the need to facilitate the expansion and enhancement of the rail network.
- 7.9 It can be seen that the liberalisation currently under way in the electricity sector is likely to increase the choice of supply of electrical traction energy in the rail market, which should benefit rail operators who are likely to experience an increase in demand over the study period, as a result of an increase in the demand for rail travel as well as the use of more powerful rolling stock. However attention must also be paid to the electrification infrastructure used to supply traction current to rolling stock, to ensure that it is capable of providing the increased electricity consumption required: this will avoid repetition of the situation observed in Great Britain, where a major upgrading programme for electrification infrastructure was needed at short notice, to meet the unforeseen increase in energy consumption caused by the procurement of more powerful and heavier rolling stock.

Supply of traction fuel

- 7.10 In the forecasting analysis, we commented that there has been a gradual shift towards electrification in a number of networks; data on the procurement and operation of rolling stock appears to confirm that trend. We foresaw, therefore, that as a result of this, and of the likely increase in the energy efficiency of diesel rolling stock, there is likely to be a fall in the demand for diesel fuel until at least 2010, mainly in the largest rail markets: after that date, a stabilisation of demand patterns is expected.

Market structure and potential

- 7.11 We noted in other chapters, the existence of some problems regarding access to the necessary facilities for diesel fuelling that may hinder the supply of traction fuel: these include uncertainty over practices at fuelling points controlled by incumbent operators, the removal of certain facilities, and environmental restrictions limiting the choice of possible locations for fuelling. These problems may have a negative impact on the market, driving up the cost of diesel fuelling services and incentivising operators to switch to environmentally-advantageous electric traction. However, in this context, this would be a perverse incentive, as it is the consequence of external actions that result in businesses being constrained to take certain decisions that may impact adversely on their profitability. As a result, some operators may decide not to launch new services to address certain markets or flows, and some existing activities may become unprofitable, leading to the withdrawal of services, and to a reduction in competition and client choice. The problems may also lead to a shortage of supply, or to a mismatch between demand and supply with excess capacity in certain areas, and a shortfall in others.
- 7.12 If a shortfall in the supply of diesel fuelling services does occur, it is likely to be met by a switch to electric traction in areas with electrified rail infrastructure, but there is a risk that this may lead to a second best solution that benefits major incumbents to the detriment of new entrants. More positively, interoperability parameters are encouraging the development of common standards for electric traction systems within the single European rail market: in the longer run, these standardisation initiatives will incentivise a wider range of operators to switch to using interoperable electric locomotives and rolling stock.
- 7.13 Diesel fuel itself is, in the majority of cases, already supplied to railway undertakings by private companies. However it is difficult to envisage the development of an alternative market in fuelling services comprising a network of independently-operated, diesel fuelling depots serving multiple clients, given the environmental and in some cases legal limitations that are in place in respect of possible locations for fuelling facilities. It will therefore be essential to ensure that adequate access to existing facilities continues to be available, as the requirement to build new facilities is a market entry barrier.

- 7.14 We consider that it should be technically possible for incumbent operators of diesel fuelling facilities to introduce procedures to meet the requirements of other railway undertakings seeking to purchase supplies of fuel at these locations, in the same way that refuelling facilities are operated in the automotive sector. Adequate arrangements for access to the widest practicable range of existing diesel fuelling facilities is particularly important, as an operator is unlikely to travel long distances to refuel its rolling stock, even where lower fuel prices can be obtained, given the extra access charges that would be incurred, the transit time and staff costs involved, and the fuel consumed en route.

Access to and services in passenger stations

- 7.15 The forecasts in Chapter 4 signal the likelihood of a small increase in the demand for access to passenger stations, and for services at stations, in the short run, as a result of the underlying growth in rail traffic. The progressive domestic liberalisation of passenger services in a number of networks, and the impending liberalisation of international passenger services in 2010, should mean that demand will increase further in the longer-term. In some areas, the growth in demand for services at stations may be exponential as liberalisation initiatives are implemented: this is likely to be a consequence of the increase in the number of rail operators serving these stations, rather than simply reflecting the increase in total passenger numbers. Each new operator may require dedicated facilities and other services within the stations at which they call: their demands may be driven by the use of different types of rolling stock, by different service patterns and, importantly, by different target mixes and volumes of passengers. Subject to spatial considerations, providing such multiple access should not be a problem, as some networks already accommodate a number of train operators using major stations, for example in Great Britain at Kings Cross Station in London and at Manchester Piccadilly.
- 7.16 With the exception of DB-Netz denying Nord-Ostsee-Bahn (Veolia) access to its motorail facilities for a service between Niebüll and Westerland¹¹, we have not been informed of any current problems in accessing these facilities and services. However, this does not mean that problems will not emerge. With more operators using the rail infrastructure at stations, and an increase in service frequencies, there may be difficulties in obtaining access to suitable station paths and platform slots, as well as constraints in accessing the minimum services offered within those stations, especially if the on-site facilities in question are restricted in scale.
- 7.17 While it is too early to say for certain that there will be a shortfall in the supply of this category of rail-related service, it may well be the case at specific locations in the context of the scenario outlined above. The evolution of this service should hence be monitored as more operators enter the rail passenger market, since the efficient and

¹¹ See: Oliver Shade, *Streit um Autozug am Sylt*, Hamburger Abendblatt, 19th July 2003.

responsive supply of services at stations is critical to the effective provision and operation of rail passenger services to meet customer requirements.

Market structure and potential

- 7.18 Given that the operation of passenger stations in the majority of networks (excluding Great Britain) will remain within the domain of one -or at most two- providers of access (that is, there will only be one or two companies providing station access for all the stations on the network), it is unlikely that a market in station access will develop. Experience from Great Britain, for example, shows that there are few incentives on train operators to choose one station over another, for reasons other than significant variations in passenger demand and revenue. Existing stopping patterns are regularly reviewed in accordance with passenger demand levels and revenue opportunities, and the calling points of new services are generally decided using the same approach, with similar outcomes. Having said that, some new entrant operators in Great Britain have decided to call at different stops than are served by the incumbent, but this has more to do with Moderation of Competition principles¹² and other exogenous factors, than an attempt to benefit from differential access charges at individual stations.
- 7.19 However, experience with the development of low cost rail passenger services (a part of Trenitalia) in Italy, has shown that there is scope to develop a “low cost airline” type approach, using suburban stations in major cities as stops for specific trains. The calling points of these low cost intercity services are not the principal stations in each city, although at present this has not been incentivised by any differences in station access charges.
- 7.20 In contrast to station access, it can be envisaged that the supply of rail-related services at stations, such as ticketing, waiting facilities, water replenishment, etc. could be provided by more than one service provider, and it is possible that a market for these services will develop. To a certain extent, some of these activities are already undertaken by third parties through sub-contracting agreements, and there is also competition for the market through tendering to supply services, a practice which has been increasingly adopted in a number of countries.
- 7.21 As mentioned above, the prospect of multiple operators at stations is likely to increase the demand for different types of services at individual stations, and the emergence of a number of potential suppliers of such services may lead to a decrease in the costs of service provision, leading to a net economic gain to the railway sector.

¹² Moderation of competition (MOC) is a policy enacted in Great Britain whereby there are limitations on the ability of new entrant operators to compete directly from point to point with franchised passenger operators. Often this is avoided by new entrant terminating its services one station after the end of the MOC route.

Access to and services in freight terminals

- 7.22 Demand for access to, and for services provided within, rail freight terminals is likely to increase substantially during the time horizon of this study, as set out in the forecasting chapter. Chapter 4 also points out that there is likely to be a shortfall in available capacity as a result of this increase in demand, and that capacity constraints are already being experienced in some networks. This prognosis is confirmed by the information that we have received from our stakeholder analysis, which signals the emergence of further problems in accessing freight terminals in the future, and that significant restrictions on the likely supply of terminal capacity will result from competing priorities, from limits on the types of equipment and services available, and from the high construction and operational costs of new facilities.
- 7.23 This suggests that the actual situation in terms of future supply patterns is likely to be worse than is indicated by the estimates contained in the forecast chapter, particularly at major multimodal freight transport hubs.

Market situation and potential

- 7.24 The markets in access to, and in services provided within, rail freight terminals are supplied by numerous entities, providing a wide range of services to railway operators. Freight terminals are managed both by incumbent and new entrant rail operators, as well as by major rail freight users, by independent private and public bodies, and, in some cases, by national infrastructure managers. Our analysis has shown that there is little publicly available information about the pricing of access to, and of services provided within, rail freight terminals, and there is even less information about the cost bases used to derive charges for access to, and for use of, these facilities and services. Furthermore, there is an information gap in terms of the profitability of freight terminal facilities. However, the existence of a significant number of rail freight facilities owned and managed by non-incumbent entities, means that it can be said that there is already a market for access to freight terminals and services, although such alternatives are not available in every key location.
- 7.25 In particular, there are a number of strategic terminals around the networks that are essential calling points for rail freight operators, given the location of major freight markets. The scope to use alternatives to these facilities is often very limited, for commercial or technical reasons. In some market areas, there are viable substitutes of appropriate size and functionality, in the form of alternative facilities owned by private entities, but this is not always the case. Within some major terminals, or adjacent groups of terminal facilities, it may also be possible to use multiple service providers, and this occurs on some networks (e.g. Great Britain and Italy). However, this is not possible in all locations, due to limits on the size of the facilities available, which may preclude the use of multiple service providers, whilst still permitting access for multiple rail operators.

- 7.26 As noted in Chapter 5, there are capacity constraints in a number of major rail freight terminal facilities. These capacity constraints are determined by physical barriers such as the proximity of local housing and topographical features, as well as by local planning limitations that do not allow existing terminals to expand. These constraints also impact on the scope to construct new freight terminal facilities; there are often planning limitations on the development of new terminals that are close to key transport centres or to major locations of freight activity; conversely, proposals for terminal developments on ‘greenfield’ sites often attract opposition from local communities on the grounds of environmental disturbance.
- 7.27 We have been told that there are very few fiscal incentives or public funding initiatives to stimulate the construction of new terminals (currently they are only available in Great Britain, Italy and in Hungary.) In the absence of some form of fiscal incentive or public funding initiative, many terminal developers and operators appear to be unwilling to invest in further expansion at their own commercial risk, on the basis that the construction and equipment costs of terminals are very high, demand levels are uncertain (even given strong underlying growth in the combined transport market) and expected profitability is insufficient.

Access to and services in marshalling and shunting yards

- 7.28 Chapter 4 pointed to the likelihood that the demand for access to marshalling and shunting yards will fall in the future, as a result of national and incumbent operator policies towards single wagon load trains. Through our analysis and our stakeholder discussions, we have identified that the supply of these services, and the range of locations at which these services can be obtained, is currently reducing, and is likely to reduce further during the timescale covered by this study.

Market structure and potential

- 7.29 Due to the limited number of major marshalling and shunting yards in existence, it may be difficult for a market in these facilities to develop. Given the locations of major freight markets and the characteristics of the resultant rail freight flows, there are only a few locations where marshalling activities can be carried out efficiently and on a large scale: some of these key locations already have insufficient capacity to accommodate existing requirements in a satisfactory way, prior to accepting additional freight services provided by new operators. Furthermore, the continuing programme of closures of marshalling and shunting yards on some networks is further limiting the options currently available.
- 7.30 This increasing supply-side limitation is likely to discourage new operators from seeking to introduce train services that require the intensive use of marshalling and shunting facilities. As a result, both the demand and supply for these facilities is likely to reduce in the long run. The ability to develop new marshalling and shunting

facilities is also constrained by planning limitations, as also noted in our analysis of the markets in access to freight terminals and in terminal services. Furthermore, there is limited appetite by incumbent operators or infrastructure managers as well as sporadic appetite from new entrants to invest in constructing new freight marshalling and shunting facilities or to modernise and remodel existing yards, in the absence of clear knowledge of the potential future demand for these services, and given continuing uncertainty over the impact of access liberalisation on the commercial viability of multi-client wagon load services. (These considerations are similar those deterring commercial investment in new and expanded rail freight terminals.)

- 7.31 It can be argued that there already exists a market in the provision of marshalling services in certain locations, as some operators themselves undertake train marshalling activities or contract them out to third parties, as a lower-cost alternative to marshalling services provided by an incumbent operator. As mentioned in previous chapters, the cost of providing marshalling services can, in some cases, be much higher when provided by the incumbent. It may be optimal for some operators to contract out marshalling and shunting services to third parties, to reduce start up costs and ongoing operating expenses. However we have been told -for example in Italy- that the economic risk of providing these services would still remain with the operator and not with the third party subcontractor: this risk may be too onerous for a smaller railway undertaking to bear. Obliging a rail operator to provide its own marshalling services may also not be an ideal economic solution; some operators do not consider marshalling and shunting activities to be part of their core business: They would prefer to use a service provider that has the lowest opportunity cost, and which is best placed to provide the service efficiently, following the payment of a reasonable fee. Depending upon circumstances, such service providers may include incumbents, other train operators, facility-owners and operators, or specialist subcontractors.

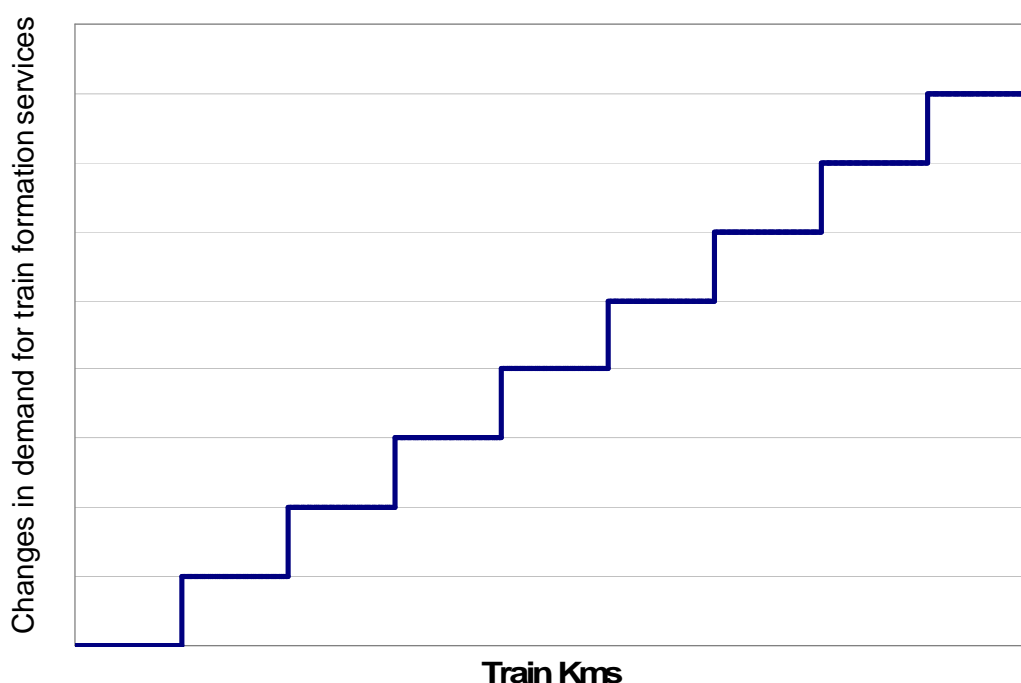
Train formation services

Market structure and potential

- 7.32 As noted in Chapter 4, we envisage that there will be very little change in the demand for train formation services prior to 2010: this is because the move towards liberalisation in the rail passenger market is slower than that occurring in the rail freight sector. Although regional rail passenger concessions are increasingly being won by third party operators, this process generally involves the replacement of an existing timetable pattern with, at most, a small increment in the number of services run. The nature of train formation services is such that variations in demand will follow a step change pattern: there will not be a corresponding change in the demand for these rail-related services with every change in train-kms. For example, an increase in the demand for train formation services will only occur when an additional train is put into service, rather than when an extra carriage is added to an existing train, as even locomotive hauled trains generally tend to maintain fixed-formations during a service day.

- 7.33 Furthermore, significant changes in train-kms run are themselves likely to exhibit step changes, reflecting annual timetable change dates: this further reinforces the non-linear demand patterns for train formation services. These effects can best be described diagrammatically, and are shown in the figure below.

FIGURE 7.1 CHANGES IN DEMAND FOR TRAIN FORMATION SERVICES



- 7.34 In liberalised markets such as the UK and Germany, we have seen a switch to fixed-formation multiple units: these trains simplify workings at terminal stations and reduce turn-round times, providing increased service capacity whilst reducing operating and maintenance costs. Although this trend is spreading across Member States, there will still be a continuing demand for train formation services in some networks. As a result, we expect there to be a very small increase in the demand for this service during the period covered by this study: however this growth will be significantly less than the overall increase in the demand for rail passenger services.
- 7.35 For similar reasons to those identified in our analysis of the market in freight marshalling and shunting services, we consider it is feasible for third parties to provide train formation services to a number of different operators. In fact, at locations served by a number of passenger operators, it would probably not be efficient for each operator to meet its train formation requirements independently, given the likely daily peaks and troughs in the level of activity. A cost-effective solution might be for one entity (or a small number of entities in the case of larger hubs) to provide these services for a range of operators. These entities might be specialist third party subcontractors, or train operating companies.

- 7.36 There are currently only a limited number of third party service providers in this field, and most train formation activities are currently undertaken in-house by train operators. However, we consider that future supply is likely to build up appropriately in response to emergent demand, and that there is unlikely to be a mismatch between the two, unless external factors such as requirements for staff safety certification limit the ability of operators to find the necessary human resources.

Access to and services in storage sidings

- 7.37 We were unable to gather any numerical information relating to access to, or services provided in, rolling stock storage sidings: moreover, stakeholders did not identify any specific problems with this category of rail-related service. Consequently, we have assumed that demand will remain close to its current level with, potentially, a small increase resulting from the storage requirements of leasing companies as the use of leased rolling stock increases, and from the needs of new entrant operators which run fewer services and thus require sidings to store their rolling stock in the interim.

Market structure and potential

- 7.38 In Great Britain, a market in providing storage sidings has developed as the Ministry of Defence, and some private sidings owners, have offered their facilities for the secure storage of rolling stock. In part, this market has developed out of the need to store new rolling stock, delivered in advance of major rail infrastructure upgrades: it has also grown as a result of demands by train leasing companies to store off-lease rolling stock available for short or long-term hire; this has aided the development of the leasing market itself. This provides an example of an independent facility owner making full use of its resources and using economic incentives to maximise the efficient use of its facility. There is the potential for this approach to be adopted on other networks; as marshalling yards and maintenance facilities are closed, they may become available for use as storage sidings: this trend in demand may also offer private entities the opportunity to enter the market for the long or short-term storage of rolling stock. Although the specific requirements for storage capacity in Great Britain may not arise on each networks, facilities may be still needed for other reasons, such as seasonal peaks and troughs of rail passenger and freight demand.
- 7.39 The conversion of redundant marshalling yards and maintenance facilities into rolling stock storage sidings also prevents their being divested from the rail estate; in turn, this allows the facilities to be adapted for other railway uses, if the future need arises. Furthermore, the very basic specification of infrastructure and signalling controls in storage sidings mean that there are very few restrictions on interoperability, and as such, a storage siding on one network can be used by rolling stock from other networks. While storage activity may not be highly profitable as a standalone business for facility owners or operators, the experience in Great Britain shows that it may be viable for commercial entities to offer this as an ancillary service.

Access to and services in maintenance, inspection and rolling stock cleaning facilities

- 7.40 The demand for heavy and light maintenance services themselves, and the resultant demand for access to maintenance facilities are both foreseen to fall in Chapter 4, as the average age of rolling stock reduces and as its reliability and efficiency increases. Some stakeholders have mentioned that they have experienced problems in utilising existing maintenance depots, since incumbent operators and facility owners have restricted new entrants' access to these facilities. If this behaviour persists, it is likely to cause substantial supply-side problems, which may be compounded by the fact that on many of the networks reviewed, maintenance facilities are also being closed or rationalised without being made available for use by new entrants: in turn, this may result in a mismatch between the incidence of demand for maintenance facilities, and the location and scale of the capacity actually available.
- 7.41 We expect the supply of train cleaning services to grow in response to demand, as it is an intrinsic element of passenger service operation, and it is also a low cost item for the majority of operators.

Market structure and potential

- 7.42 A market in maintenance facilities has developed on some networks where major fleets of new rolling stock have been introduced: in these cases, manufacturers have sponsored the construction or refurbishment of dedicated depot and maintenance facilities specifically designed for the new types of rolling stock. Clearly, this option is most practicable where rolling stock is deployed on a clearly defined network of services. As an example of an alternative approach, standalone companies, some of which are privately-owned, have been set up on certain networks to manage the maintenance and inspection of rolling stock, independent of rolling stock manufacturers or individual train operators.
- 7.43 With the increasing use of leased rolling stock, most of which is new build, the role of private maintenance facilities is expected to grow significantly. In many cases, maintenance costs are included in the overall rolling stock leasing charge and, as such, the choice of maintenance facility is the responsibility of the leasing company, which typically contracts out these activities.
- 7.44 The costs of providing rolling stock maintenance and inspection services are often unclear, and the fact that maintenance costs are included in the overall leasing charge in the case of some rolling stock makes the situation even less transparent. Hence it is difficult to assess whether the provision of rolling stock maintenance and inspection services is a profitable standalone activity, or not.
- 7.45 Given the supply-side problems mentioned above, and the trend to the use of leased

rolling stock, it is likely that non-incumbent entities will gain an increasingly important role in the provision of rolling stock maintenance services. However, given the investment needed to acquire or refurbish appropriate sites and install the necessary facilities and equipment, as well as the lead times involved, it is unlikely that the private sector will be willing to meet the entire shortfall in supply, or to take over all rolling stock maintenance activities on an independent basis.

- 7.46 There is already a market for (internal and in some cases external) rolling stock cleaning. The majority of incumbent operators employ third party companies as subcontractors to undertake the internal cleaning of rolling stock: the situation in respect of the provision of external cleaning services is similar to that for rolling stock maintenance services. Given that the cleaning market is already served by a wide range of private operators, it can already be considered to be fully open. Accordingly, it is unlikely that any problems in relation to the balance between the demand and supply of rolling stock cleaning services will be encountered during the study period.

Back-up services

- 7.47 We envisage that trends in the demand and supply patterns of back-up services are likely to remain in line with one another, especially as the demand for back-up services is likely to reduce because of the increased efficiency and reliability of newer rolling stock, as mentioned in Chapter 4. This scenario assumes that incumbent operators continue their current policy of scrapping or exporting older rolling stock, and that they do not begin to sell older and obsolescent rolling stock to other European operators on a widespread basis. If this policy were to change, the amount of second hand rolling stock in regular operation would be likely to increase; as mentioned earlier, this might, in turn, lead to an increased demand for back-up services as a result of a fall in the average reliability of locomotives and multiple units.

Market structure and potential

- 7.48 In the majority of networks back-up activities are undertaken by the operators themselves, or by third parties. The requirement to provide such back-up services in-house can be seen as a substantial barrier to entry, since the obligation on an operator to provide spare locomotives and train drivers for immediate use in the infrequent event of a breakdown, represents major sunk cost
- 7.49 In Great Britain, there is already a market for back-up services, and a small number of operators provide these services -mainly to major passenger train operators. In reality, the core businesses of these service providers are the operation of rail freight services, as well as the spot hire of locomotives for charter and other short-term rail services. While it is possible that a market in back-up services will develop at a European level, we consider it is unlikely to do so given the fact that demand for these activities will generally be determined by local circumstances. However if there were to be

geographically-significant pockets of services with persistently unreliable rolling stock, a private operator might be encouraged to enter this market and provide back-up services at key locations, subject to acquiring suitable rolling stock, maintenance and storage facilities, and licences.

- 7.50 In some cases, rather than providing back-up services themselves, operators have entered into specific arrangements with other train operators with suitable traction resources, in order to procure back-up services on a more economic, contractual, out-sourced basis. Reflecting this trend, we note that rail operators on some European networks are also considering selling off their spare locomotives and buying-in back-up services, in order to reduce their fixed costs and operational expenses.

Locomotive pushing services

- 7.51 The expected demand profile for locomotive pushing services was discussed in the forecasting chapter. We consider that trends in the demand and supply of locomotive pushing services will also be likely to remain in balance, and no capacity problems should arise in future, in respect of this activity.

Market structure and potential

- 7.52 The structural characteristics of the market in these activities are such that there is unlikely to be a significant future demand for the spot hire of pushing locomotives. The majority of operators needing pushing services have already acquired suitable locomotives in order to meet the requirements of large-scale or long-term freight traffic contracts: hence it is more efficient and cost effective for them to provide pushing locomotives from their existing traction pool, which may be owned or leased on a long-term basis. Furthermore, the nature of the major freight markets in question, and the timetabling procedures of infrastructure managers controlling key Alpine routes, mean that there is rarely a need for the provision of this service at short notice.
- 7.53 Given that new entrant private operators as well as incumbent railway undertakings generally provide locomotive pushing services in-house, an external market for this service is unlikely to develop: accordingly, third party provision of pushing services is likely to take place only in exceptional circumstances. In addition, the construction of less steeply graded base tunnels on key Alpine routes will reduce the overall requirement for locomotive pushing in the longer-term.

Services in border stations

- 7.54 We have forecast that the demand for services in border stations is likely to reduce during the time horizon of this study, and that as a result, there is likely to be an oversupply of capacity in these services in the near future. In our stakeholder analysis,

we noted that problems have been encountered at external border stations in the past. We believe that these incidents are transitional problems that should not affect market development in the longer-term: however, in the shorter-term, such difficulties can impact adversely on the free movement of goods and services by rail between Member States. For this reason, we consider that the situation at border stations should be monitored to ensure that any remaining problems are resolved as soon as possible. An analysis of whether a market for services in border stations is likely to develop is not appropriate, given the context described above.

Training services

- 7.55 The issue of access to rail staff training services and training facilities was raised on numerous occasions in discussions with stakeholders, as well as being clearly identified as a major issue in our separate access conditions analysis. We have noted that the demand for training services for rail staff has increased substantially in recent years, and that it is likely to increase still further in the future as incumbent railway undertakings are required to recruit more drivers in response to demographic trends, and as new private operators enter the rail freight and passenger markets.
- 7.56 The existence of national regulations that require individual rail staff to retake training programmes each time they change between rail industry employers (as is currently the case in Italy) further limits the rate at which the emerging shortfall in train drivers and other safety-critical staff members is likely to be reduced. As a result, it is possible that the demand for rail staff training services will continue to exceed supply for some time to come, creating an important barrier to market entry, and inhibiting the development and growth of the rail freight and passenger markets.

Market structure and potential

- 7.57 Our stakeholder discussions and our analysis of the requirement for rail drivers and of the structure of the market in training services have shown that there is currently an inadequate supply of drivers on a number of networks, and that this shortfall is likely to persist. We consider that this problem is partly due to the lack of independent driver training facilities. This bottleneck has been addressed in some rail networks (e.g. those in Scandinavia) by creating a separate organisation with responsibility for driver training services, independent from the incumbent operator and from the national infrastructure manager.
- 7.58 There are a number of networks where a market in this activity already exists, with numerous bodies, including railway undertakings and independent entities, providing driver training services. These examples indicate that there are clear opportunities to create a market for the provision of driver training services by encouraging other entities to enter the market, especially in networks where the incumbent operator is currently the only provider of these services. However, the development of the driver

training market across international borders is currently limited by interoperability restrictions: given the different signalling and technical specifications on each network, the training market may be limited to individual national networks at present.

- 7.59 It is important to note, however, that this does not represent a restriction on market entry in principle, as there is nothing to prevent a training entity located on one network from obtaining approval from a second network to provide driver and safety training services suitable for use on that network. If this situation evolves into the development of an open market in driver and safety-critical staff training services across a number of rail networks, or into the development of a pan-European network of driver and safety-critical staff training facilities, it should contribute to the elimination of the current and projected shortfall in rail drivers. The eventual implementation of the draft *Directive of the European Parliament and of the Council on the certification of train drivers operating locomotives and trains on the railway system in the Community*, currently in its second reading, should have beneficial effects in this area.

Provision of on-board train protection systems as well as telecoms and communication services

- 7.60 In our stakeholder analysis, we have already identified that there are shortfalls in the supply of equipment for on-board train protection systems on some networks, and that these shortages are likely to continue in the near future. Some stakeholders have also mentioned that the equipment itself is very expensive, deterring market entry by substantially increasing the costs of compliance with the requirements of infrastructure managers. This is clearly a transitional problem. In the long term, improved interoperability will benefit new entrants and private operators, but in the shorter-term, the on-board equipment required imposes additional costs and complexity that are not offset by the immediate benefits obtained. New entrants have also complained of installation delays for on-board equipment, to the detriment of their own operations; they state that the delays are due to the fact that manufacturers are prioritising the needs of incumbents, as they have larger fleets to be equipped.
- 7.61 On some networks, the problems and delays in installing equipment for on-board train protection systems have been mitigated by local safety bodies, who have allowed the transitional compliance period for on-board installations to be temporarily extended: this has given both new and incumbent operators a longer period to meet the new requirements. However, given the continuing shortfall in equipment supply, some operators may still face the risk of having fleets of locomotives and rolling stock that cannot be used on either their domestic rail network or on international services, after expiry of the extended compliance period.

Market structure and potential

- 7.62 On-board train protection systems and other similar equipment are already provided

through an open and competitive market, and are often procured using public tendering procedures: hence there is, in principle, effective competition for this market. However, as our analysis shows, in practice there are significant market disequilibria since current suppliers cannot meet existing demands. Many manufacturers are unwilling to increase capacity substantially to meet current and short-term future demands, in order to avoid the risk of having to cut back production severely in future years, if and when the demand for train protection systems and other types of rail equipment reduces. The possibility of such reductions may arise from the completion of major installation programmes, or from shortfalls in public funding for the rail sector. Furthermore, the substantial set-up costs incurred in establishing a new business entity to supply and install on-board train protection systems and other rail equipment, in terms of technical know-how and manufacturing facilities, makes it very difficult to encourage new companies to enter this market.

Telematics services for freight operations

- 7.63 We have mentioned in Chapter 4 that we expect the demand for this service to increase substantially during the time-horizon covered by this study, as the benefits of this technology are recognised by stakeholders and spread across international networks.

Market structure and potential

- 7.64 From our stakeholder analysis, we have established that some operators and facility owners have upgraded their telecommunications and I.T. infrastructure so as to be able to offer robust and effective telematics services. Most of these initiatives have been undertaken by private rail operators and by entities that operate integrated logistics businesses; however, telematics systems have not yet been introduced on a pan-European scale. As operators, facility owners and freight users increasingly appreciate the benefits of introducing such services, in terms of potential opportunities for traffic growth, cost reductions and modal shift, we expect increasing demand for the installation of pan-European telematics systems (Subsequent to our analysis we have been informed of the presentation to the sector of the Strategic European Development Plan concerning the implementation of the technical Specifications for Interoperability “Telematics Application for Freight” (TAF TSI), which will support the installation of pan-European telematics systems). While the costs of introducing the necessary equipment and software systems may be significant, our discussions with stakeholders have not identified this as a deterrent: stakeholders have instead pointed out that the commercial benefits of such equipment far outweigh the initial cost, leading to increased profitability in the medium to long term.
- 7.65 Once the necessary equipment and systems infrastructure is installed in key facilities and on major rolling stock fleets, there may be potential for third party service providers to offer telematics service to a wide range of railway operators and freight users, on an international basis across multiple rail networks.

- 7.66 We expect that commercial initiatives to ensure rail freight can continue to compete effectively with road transport, will stimulate the development of solutions to the current shortfall in the supply of telematics services in the rail freight sector.

Computer reservation services for passenger transport

- 7.67 The forecasting exercise described in Chapter 4 indicated that the demand for computer reservation services is likely to remain stable until 2010. Following this date, demand is likely to increase as a consequence of the expected liberalisation of the international rail passenger market. However, this growth will only occur if there are no supply-side restrictions, in terms of the provision of third party access to the reservation systems controlled by incumbent operators.

Market structure and potential

- 7.68 Currently, each national rail network in Europe has its own discrete passenger reservation system: each separate national system interacts to some degree with the equivalent systems in other networks, principally to facilitate international rail passenger travel. While most of the technical systems themselves have been developed and provided by private companies, reservation activities are almost always controlled and run by the incumbent rail operator and, as such, systems are customised to meet the specific requirements of that operator. These practices are going to be significantly improved with the development by the European Railway Agency of the Technical Specifications for Interoperability “Telematics Application for Passengers” in the forthcoming years. A positive impact in this respect is also to be expected from the eventual implementation of the Draft Regulation on Passenger Rights and Obligations currently being looked at in the framework of the Third Railway Package.
- 7.69 It is also feasible for third party entities to sell tickets and to arrange passenger reservations on behalf of more than one rail operator. This option is already possible on a number of networks, where tickets and seats are reserved and sold through registered travel agencies: however, this still requires use of the existing national reservation system, and may only offer limited access and functionality. The scope to customise current and planned reservation systems to allow for a wider range of rail services and differing ticket types will be critical issues in responding to requests for access from new operators. Whilst issues relating to the design and capability of reservation systems may not create insuperable access problems in principle, they may nevertheless delay the ability to fully integrate new operators into existing systems.
- 7.70 However, it is not clear whether incumbent operators should, in fact, be compelled to provide new operators with access to existing reservation systems: for example, this is not an obligation in the airline industry, and no major problems have developed as a consequence. It may be more cost-effective for each operator to procure its own independently-run reservation system, incorporating internet-based booking facilities,

and also to arrange specific locations within stations and at other retail outlets such as travel agents, where passenger reservations can be made. Our work in other industries, but also experiences in the UK rail industry, have shown that this is a cost item that individual companies manage in different ways from their own experiences and is a source of cost savings for them, the use of independent systems can also lead to innovative ticketing and reservation systems being introduced that are not currently being offered by the incumbent operators.

Leasing of rolling stock

- 7.71 Our forecasting exercise identified the likelihood of a significant increase in the demand for leased rolling stock as more rail operators enter the rail passenger and freight markets. Our discussions with leasing companies and manufacturers did not point to any particular or persistent shortfalls in supply, and hence we believe that trends in the demand and supply of leased rolling stock will be likely to remain in balance during the time horizon of this study, subject to the possibility of a production lag if leasing contracts for new types of rolling stock are agreed significantly in advance of the manufacturing and testing process.

Market structure and potential

- 7.72 There is already a well developed market for rolling stock leasing in a large number of networks. This is spreading further as both incumbent operators and new entrants seek to obtain rolling stock in this manner, and as private rolling stock leasing companies seek to expand their activities to take advantage of the liberalisation developments across E.U. Member States. However, as mentioned earlier, some railway operators have complained about the cost of leasing rolling stock, especially if a small number of locomotives is requested; they have stated that the charging and cost structure of the leasing market is not yet sufficiently transparent, making it difficult to enter the rail market profitably.

Freight rolling stock leasing market

- 7.73 There are strong pressures for investment in new locomotives and fleet renewal on several fronts, principally to:
- Meet customer requirements for faster transit times and improved reliability;
 - Adapt to changing regulations, including the ability to operate cross-border trains without changing locomotives;
 - Improve competitiveness with reduced operating costs, improved performance and availability;
 - Improve asset productivity by matching fleet specifications to changing output requirements from freight clients (longer flows, heavier trains); and

- Reduce the high average age of existing fleets, where locomotives are often over 30 years old, and are under-powered and unsuited for new operating patterns.
- 7.74 Public sector freight operators have historically received funds for capital investment from their respective national governments but, with potential EU restrictions on state aid on competition grounds, this source of funding is likely to be less accessible in future. Furthermore a large number of railway undertakings in the new Member States have suffered, and in some cases continue to suffer, from severe financial difficulties that the reduction of debt set out in the original liberalisation efforts of Directive 91/440/EC cannot solve. The larger rail undertakings seem likely to pursue a policy of finance leasing, rather than entering into operating leases for the majority of their freight locomotive requirements. Nevertheless, there are some examples of operating leases being used by major rail undertakings to cover short term requirements and shortages of particular types of traction.
- 7.75 Among the traditional regional rail operators, there is already significant leasing activity, often reflecting entry into the longer-distance rail freight market: however, most leasing contracts are of modest scale, featuring between 1 and 5 locomotives. Options for new rail freight operators are often constrained by the limited duration of freight haulage agreements, and by financial institutions' restrictions on lending without long term contracts. These operators are therefore a prime candidate for operating leases. Although initial market interest focused on diesel traction, there is growing use of multi-system electric locomotives.
- 7.76 The freight leasing market in the UK developed with the sale of EWS's fleet of 280 locomotives to Angel Trains in 1998. The other UK-based Rolling Stock Leasing Companies (ROSCOs)– HSBC Rail and Porterbrook - have also leased similar Class 66 diesel locomotives to Freightliner and to GB Railfreight in Great Britain.
- 7.77 Elsewhere in the European Union, the leasing market has developed rapidly from a small base of less than 50 locomotives in 2000, to around 150 at the end of 2002 and 350 in 2006. The market has seen increased competition, with subsidiaries of manufacturers, state railways and rolling stock leasing companies (eg Angel Trains Cargo, Mitsui MRCE and CB Rail) as active participants. However, the complexities and diversity of the European rail sector, and the small-scale nature of many leasing contracts, have so far deterred many of the locomotive lessors active in the US from entering this market. At present each locomotive type must be individually certified for each country in which it is to operate. The certification process can be expensive and creates a barrier to market entry. The draft Directive on cross acceptance of rolling stock that was adopted by the Commission in December 2006 should limit the effects of this barrier substantially.

Passenger rolling stock leasing market

- 7.78 In the passenger sector, the leasing market developed following the privatisation of

British Rail's passenger rolling stock fleet, and the establishment of ROSCOs in Great Britain. The adoption of an operating lease model achieved off balance-sheet treatment, and facilitated market entry by new passenger train operators. Residual risk transfer is handled in Britain by the government guaranteeing overall continuity of the railway network: in specific cases, this is supplemented by guaranteeing some roll-over commitment beyond the end of the franchise for which the rolling stock has been purchased, albeit not for the full life of the asset. The large and varied rolling stock portfolio of the British ROSCOs has enabled them to take a reasonably relaxed view of residual value risk in individual cases. However, it remains to be seen whether the current review of leasing charges mentioned earlier, will impact on the ROSCOs' appetite for risk.

- 7.79 The main driver of passenger rolling stock leasing elsewhere in Europe lies in regional rail concessions and franchises. Invitations to tender often specify a requirement for a substantial volume of rolling stock, but do not necessarily oblige the incumbent operator to make existing stock available to potential bidders. The exception is where trains have been procured directly by the regional authorities concerned, when the stock transfers as part of the contract itself.
- 7.80 The relatively short duration of concessions and franchises (3-9 years) in relation to the typical asset life of rolling stock (30 years), might be expected to result in the imposition of a significant risk premium. However, given the limited volumes of stock currently leased or available for lease in the market, the continuing reluctance of state operators to release surplus rolling stock, and the prospect of increasing numbers of concessions being tendered, leasing companies can afford to take a reasonably relaxed view of the re-leasing potential of common types of regional rolling stock that are capable of transfer between different regions.
- 7.81 Reflecting these considerations, the main private-sector rail leasing companies - Angel Trains Europa and CB Rail - have standardised on a limited number of train types such as Bombardier Talent and Alstom Lint DMUs and Stadler Flirt EMUs; there are currently around 200 such units under lease. In Sweden, Transito, a public sector not-for-profit ROSCO was established by the local transport authorities to provide an equivalent train leasing capability to support the tendering process for regional rail concessions and franchises.

Leasing of staff

- 7.82 We have mentioned earlier that the demand for leased staff will increase as more rail operators seek to enter different markets. However, underlying growth in demand is currently not being matched by increasing supply on those networks where national legislation or industry regulations preclude rail staff leasing. Given the important benefits that can be obtained by leasing staff, as discussed below, it is possible that operators on networks where this activity is precluded will incur a higher cost-base than operators on adjacent networks. This may represent a constraint on the potential

development of their businesses.

Market structure and potential

- 7.83 The overall market and specific demand for leased staff is highly correlated with the degree of liberalisation on each rail network, and is also correlated with the size of the leased rolling stock fleets in service. In some countries, there is already an active market for leased staff, as a number of niche entities have started businesses to provide staff to a range of railway undertakings.
- 7.84 The possibility of leasing staff may offer significant advantages to potential entrants into the rail freight and passenger markets, by substantially reducing start up labour costs and training requirements, and by permitting a more flexibly-structured cost-base that more directly reflects variations in levels of business activity. One rail operator explained that there was a substantial difference in labour costs in countries where leasing was possible, when compared to those countries where it was not possible. Moreover, we were told that the leasing of rail staff has become a profitable business activity, and that there are a number of entities that wish to expand their activities to service all major European networks.
- 7.85 The market demand for leased rail staff is likely to expand further during the time horizon of this study: this will reflect the progressive liberalisation of the rail sector across Europe, and the abolition of national restrictions on staff leasing in individual Member States. It will be important to abolish current limitations as soon as possible, to ensure that the overarching principles of efficiency and the development of freely-functioning internal markets in labour and services are not impeded. With these restrictions lifted, there is also likely to be further market entry from other providers of staff leasing services and, in turn, from new rail operators.

Summary of expected demand and supply patterns: Need for action

- 7.86 In the majority of markets for specific rail-related services that we have reviewed, we expect future supply patterns to respond progressively to the evolution of demand: as a result, we do not envisage that there will be significant market disequilibria or instability in these cases. However, our analysis has also identified the actual and potential existence of supply side problems in respect of a number of categories of rail-related services and facilities: Specifically, these problems relate to the availability of access to (and, in some cases, the provision of services within):
- Freight terminals;
 - Maintenance depots;
 - Marshalling and shunting yards;
 - Traction energy supplies (electricity and diesel fuel);

- Driver and other safety-critical staff training facilities;
- On-board safety equipment; and
- Staff leasing services.

7.87 Potential shortfalls in the supply of rail-related facilities and services as a result of capacity constraints or behavioural issues are likely to limit the scope for growth and integration in the markets in question, to the consequent detriment of the future development of the European rail sector itself.

Responsibilities of bodies other than the European Commission

7.88 The need for action lies in these specific areas: however, it should be recognised that corrective measures may well be the responsibility of bodies and entities other than the Commission, which may have no scope to intervene. For example, constraints leading to shortfalls in capacity and capability in freight terminals, maintenance depots or marshalling and shunting yards may be due to inadequate investment in these locations: this can only be corrected by infrastructure managers, facility owners or private investors taking the opportunity to invest in new facilities or to upgrade existing ones.

Addressing shortfalls in capacity at freight terminals

7.89 Whilst private facility operators have generally been encouraged by the opening of the rail market and the resultant increase in the number of potential clients, developers and operators have so far been very cautious of investing in new or improved terminal infrastructure at their own commercial risk. These stakeholders have taken the view that the construction and equipment costs of new or expanded terminals are very high and that expected profitability is insufficient:

- This view reflects uncertainty over future demand levels (even given strong underlying growth in some segments of the rail freight market, such as combined transport) and specific risks around the stability and permanence of the traffic flows captured by new rail operators.
- In the absence of certainty over the future level of traffic, income streams will be considered to be too risky to support major long-term investment in terminals.

Use of capital grants

7.90 The trade-off between ensuring favourable investment conditions to promote private investment in expanded and modernised facilities and ensuring open access to facilities and services is not easy to resolve. However, the impact of these countervailing influences can be minimised by encouraging national governments to incentivise business entities to invest in these facilities, by providing grants to reduce their upfront investment costs.

- This policy has been implemented in Belgium, Great Britain, Hungary and Italy¹³ (although this was not targeted on these specific facilities but had the wider goal of increasing freight traffic as a whole).
- The grants have generally been designed to encourage freight traffic to switch from road to rail, subject to value for money criteria.
- Given the planning and development timescales involved, the effectiveness of grants for terminal infrastructure may be reduced if there is uncertainty over their future availability: this occurred, to some extent, in Great Britain.

Future development of the market

- 7.91 It should be noted that the market in the supply of terminal infrastructure is still in transition. In the longer-term, the progressive implementation of liberalisation initiatives may itself encourage the scope for private investment in rail freight terminals, maintenance depots or marshalling facilities. A mature and well-developed rail freight market where organic growth is encouraged through increased competition and efficiency, and where new operators take reasonable market shares from incumbents, will provide a context in which the risk of making such investments is further decreased.

Rolling stock maintenance depots

- 7.92 From our analysis, we have identified the likelihood of a shortfall in the supply of capacity at maintenance depots, that may not be fully met by the private sector. We have not identified any clear solutions to this constraint, given the limitations on the feasibility of investing in new or expanded facilities in certain locations as a result of the environmental implications of carrying out train maintenance.

Alternative business models

- These factors may encourage operators to join forces and create international maintenance companies with a centralised structure, offering the ability to reduce costs and to use existing and modernised capacity to best effect, in order to provide maintenance services to a number of different companies.
- Alternatively, operators may choose the strategy of encouraging manufacturers to provide their maintenance facilities, either at locations owned by the manufacturer or at depot facilities that may be built and run by the operator (potentially in conjunction with the manufacturer).

¹³ Taken from RAILIMPLEMENT findings

Supply of traction electricity

7.93 We have identified that action is needed in respect of the supply of traction electricity, to ensure that the benefits of liberalisation in the European electricity supply industry are also passed through to the railway sector and to rail users. In this context, however, we note that in deciding on their strategy to respond to underlying increases in the demand for traction electricity, rail infrastructure managers and other public bodies will necessarily need to strike a balance between

- The incremental costs of installing, upgrading and maintaining the necessary electrification infrastructure and supply equipment, and
- The potential energy savings and other environmental benefits that would accrue from the increased use of electric traction

On-board safety equipment, telecoms systems and communication equipment

7.94 On-board safety equipment, as well as telecoms systems and other rail communication equipment are already provided through a competitive market, albeit one comprising a limited number of suppliers due to the specialist capabilities required and the high costs of market entry.

- There is little requirement or scope for direct policy intervention in this market, although the development of interoperability policy and the resultant adoption of pan-European technical standards in the rail sector should lead to greater homogeneity in the range of equipment and systems procured across all Member States, with the prospect of increased production runs and lower unit costs.
- This may potentially widen the range of possible suppliers of these types of equipment and systems, and improve the cost-effectiveness of the products and services supplied, if only to a limited extent.

Overview: role of the European Commission

7.95 The caution expressed about the scope for deploying intervention measures in respect of specific activities and facilities in this analysis, should not be taken to imply that the Commission has a only a limited role in promoting and facilitating market opening and integration with respect to rail-related services. The role of the Commission should be to act to correct those areas where structural or behavioural factors mean that markets are unlikely to correct themselves in the foreseeable future.

7.96 Effective corrective measures need not only comprise direct interventions through legislative or juridical processes, but also the encouragement of convergence around the promotion of best practices identified across Member States. This, in turn, will have a longer term beneficial effect on the European rail passenger and freight markets, as technical differences between networks are gradually removed, further reducing barriers to entry and encouraging the efficient growth of the railway sector.

Provision of rail-related services

- 7.97 The table below provides a summary of the providers of each service, categorised according to whether the service is provided by the national rail infrastructure manager, by the incumbent railway undertaking, by each rail operator independently, by an independent public source, or by an independent private source. In a number of countries, the services listed below are undertaken by more than one category of service provider: hence the totals may not add up to 27.

TABLE 7.1 PROVIDERS OF RAIL-RELATED SERVICES

Services	Infrastructure Manager	Incumbent railway undertaking	All operators	Independent public provider	Independent private provider
Electricity for traction	23	2	0	0	0
Diesel fuel	4	<u>3</u>	16	0	0
Locomotive pushing services	1	4	18	0	0
Back-up services	2	2	17	1	0
Services in marshalling & shunting yards	9	<u>7</u>	13	1	1
Train formation services	8	6	13	0	0
Services in freight terminals	5	<u>8</u>	12	3	0
Telematics services for freight operations	4	3	11	0	0
Services in passenger stations	8	7	12	1	0
Computer reservation services for passenger	2	6	17	0	1
Training facilities	5	7	<u>14</u>	0	3
Leasing of rolling stock and staff	0	6	2	1	<u>13</u>
Rolling stock Maintenance	4	1	18	1	10
Services in storage sidings	8	8	9	0	1
Provision of train protection systems etc	1	1	0	0	21
Services in border stations	14	<u>9</u>	10	0	1
Technical inspection services	13	4	3	0	2

Source: Steer Davies Gleave analysis. Underlined values show where problems were identified

- 7.98 It can be seen from the table above that on the majority of European networks, rail-related services are either undertaken by the infrastructure manager, by the incumbent railway undertaking, or by individual operators. In a number of Member States, some key rail-related services and facilities continue to be supplied by, and controlled by, the incumbent operator: this may impact on the actual or perceived ease with which other operators can obtain access to these services and facilities. This situation may lead to intrinsic conflicts of interest, in that an incumbent operator defending a market position is also a facility owner who must allocate priorities within rail-related facilities that are critical to effective market entry, and who must also determine the arrangements for offering the services within the facility.
- 7.99 A number of stakeholders expressed concern about this issue: in particular, new entrant stakeholders point to the common ownership of facilities by incumbents as a potential source of negative “behavioural” factors to the detriment of their own activities. The analysis set out in the table above certainly appears to show that problems with marshalling and with services in freight terminals occur in those networks where the incumbent operator still undertakes these services. The same is true for border crossings.
- 7.100 However, it should be emphasised that the existence of problems is not an automatic indicator of discriminatory practices by the incumbent. For example, our analysis has identified that there are problems in access to marshalling yards in a number of Member States. But problems have arisen on those networks where the infrastructure manager provides the fuelling service, as well as networks where the incumbent still provides this service. The impact of the problems in relation to training facilities is harder to identify, given that in the majority of networks, training services are provided by each operator independently.
- 7.101 It should be noted that in a number of cases, the designation of the stakeholder responsible for providing specific categories of rail-related service is determined by the national implementation law. For example, freight terminal operations in Norway are run by CargoNet as a result of a policy adopted during the rail liberalisation process, requiring the Norwegian rail infrastructure body not to retain any such facilities, in order to avoid having to create a real estate division within that entity.
- 7.102 The recent Trafikstyrelsen report¹⁴ assessing capacity issues in key Danish freight terminals mentions that a potential solution to significant capacity problems in that market is a change of ownership: the report describes a number of ownership models going forward:

¹⁴ “The future of the intermodal terminals” with the subtitle “capacity conditions, financial sustainability and organisational framework for the intermodal terminals in Taulov and Høje Taastrup” Hovedrapport Trafikstyrelsen October 2006

- Public-private partnership limited company (model 1)
 - Creation of a company under the infrastructure manager (model 2)
 - State Company, or Independent Public Company (model 3)
 - Sale to the private sector (model 4)
 - Sale to Railion Danmark A/S (model 4a)
 - New organisational placement under DSB (model 5)
- 7.103 Our wider analysis, looking across all the rail networks of E.U. Member States, confirms that the independence of the operator of a rail-related facility in arranging access to the facility in question, in allocating capacity within that facility, and in providing the rail-related services available at the facility, is key to providing effective access to rail-related facilities and services.
- 7.104 The RAILIMPLEMENT report focused on the analysis and evaluation of the independence of the essential functions of a rail infrastructure manager. To ensure that access to rail-related facilities and the provision of rail-related services is also provided equally to all operators, similar provisions could be introduced to ensure the elimination of any remaining barriers to entry. These requirements would not necessarily need an onerous separation of the ownership of rail-related facilities and services from main line rail operations, but should contain a clear definition of the prerequisites of an independent facility operator or service provider. In other words, it should stipulate that the deciding mind of the facility or service in question must act independently of other operating activities.
- 7.105 One of the options listed in the Trafikstyrelsen report, and often mentioned in our stakeholder consultation, is the suggestion that all rail-related services and facilities should be operated by the national rail infrastructure manager. This option has the benefit of allowing rail operators to approach a single entity for all their access needs, and would also potentially provide market entrants and other applicants for access with a single comprehensive information source, in the form of a Network Statement containing all the necessary information on rail-related services and facilities.
- 7.106 Furthermore, it can be argued that the operation of rail-related facilities and services is not the principal responsibility or core business of the national rail infrastructure manager: as such, a national infrastructure manager may have only limited resources and funding to ensure the efficient provision, operation and development of these facilities and services. To secure maximum efficiency, responsibility for the operation and provision of rail-related facilities and services should remain with bodies that can most efficiently undertake the relevant activities. Finally, the obligatory transfer of these activities between separate legal entities would, in many cases, incur substantial transactions costs for the parties involved, which will not facilitate the achievement of economic efficiency in the provision of rail-related services, given the limited benefits likely to result.

- 7.107 While the traction electricity service should be provided by those best able to supply the electricity efficiently to the network, the same is not true for the electric traction supply network as this is part of the core rail infrastructure in that most of the network is on the core infrastructure and not physically separated from it. In order to ensure that it is operated and managed efficiently and that there are no problems or delays in the resolution of problems on the core rail network, the management and operation of the electrical supply network should remain with the infrastructure manager.
- 7.108 In summary, we consider that endowing the management of rail-related facilities and services in each Member State to the relevant national infrastructure management body (except for the management of the core electrical supply grid) will not yield sufficient benefits for current and prospective users, to outweigh the potential cost of transferring responsibilities away from entities that are most competent and experienced to undertake the specific activities in question.
- 7.109 We noted in Chapter 5, and earlier in Chapter 7, that new entrants have faced problems in obtaining access to marshalling and shunting yards, because of a general policy of rationalisation adopted across a number of Member States by incumbent railway undertakings. In these circumstances, the principle of independence proposed earlier would serve to ensure that such access problems were limited, as it would incentivise the facility operator to seek additional business opportunities, and as a result, make better use of the sites where capacity is available for third party rail operators.
- 7.110 Since the establishment of independent facility operators at key marshalling and shunting locations may not be possible in the short term (and may, in any case, be subject to economic concerns similar to those expressed over the transfer of responsibilities for freight terminals), an alternative proposition could be to introduce 'Use-It-Or-Lose-It' arrangements for key facility owners, analogous to those applied to train path allocation on some networks. A provision could be introduced, stating that after a defined timescale, if a marshalling facility has been abandoned or if usage remains below a certain percentage, the facility owner must allow other operators into that facility, including offering an option to tender for the management and operation of all or part of the facility. In this way, market testing can take place to establish if facilities are of strategic importance to new operators. As a result, some disused facilities may be reopened, while those that are of no interest to any current or prospective operator could be permanently closed, and the land sold or passed to a separate (public) rail industry body that could safeguard it to ensure that the location is not lost to future rail use.
- 7.111 The key to securing effective third party access to active operational marshalling and shunting yards remains the concept of the independent directing mind of a rail-related facility, as described earlier. In Great Britain, for example, there are provisions in the railway regulatory framework to allow an operator to ask the Office of Rail Regulation to compel the rail infrastructure manager or the specific facility owner to allow access to that network or facility if there is capacity reasonably available. This

approach could be adopted in other Member States. However the regulatory imposition of access rights for third parties may have perverse effects on the effective utilisation of available capacity within the facility in question, and also on the potential to further expand the facility. Hence, it should only be applied if there is no viable alternative available.

8. POLICY RECOMMENDATIONS

Introduction

8.1 We mentioned in previous chapters that, in the majority of Member States, the transposition and implementation processes have only involved the replication of the exact wording of the EU Directives into the respective national laws. Moreover, a number of Member States have commented that they have not made further progress in the definition of the necessary access conditions, as there are currently no rail operators other than the incumbent in the national market, and as there are no current initiatives by potential new entrants. This approach exemplifies the reactive rather than proactive stance of some Member States towards implementing EU legislation: whilst it would be ideal to promote the adoption of a more proactive philosophy, this is unlikely to occur in a number of Member States in reality. As a result, the European Commission and the European Parliament are obliged to take a more proactive role in encouraging the liberalisation process through one or more of the following mechanisms:

- The preparation of more detailed legislation;
- The publication of guidelines that better define and achieve the goals of the liberalisation process; and
- Common approaches to ensuring access to rail-related services.

Legislative recommendations for rail-related services

8.2 Directive 2001/14/EC was drafted with a level of detail appropriate to allow the general principles for ensuring access to, and establishing charges for, rail-related services to be clearly defined: it envisaged that governments in individual Member States would subsequently set out detailed provisions according to national requirements. While this is the optimal approach, there remain some areas that may be unclear and as a result need further attention.

8.3 The use of high level legislation aims to encourage the resolution of any potential problems through the use of existing competition law or regulatory rules. In a number of networks, however, this approach is neither sufficient nor appropriate, since national competition legislation and regulatory bodies have not been tested in such a manner as to give industry participants sufficient confidence that this “hands-off” approach will be adequate to ensure an effective outcome. In the RAILIMPLEMENT project, and in the stakeholder analysis undertaken for this project, we asked stakeholders whether they had approached their national competition or regulatory authorities with the problems that they had mentioned to us: many told us that they felt that these authorities were usually understaffed and did not have the experience to deal with their problems effectively, or within a reasonable timescale.

8.4 Based on our research, we consider that the structure and contents of Directive 2001/14/EC, taken as a whole, appear to be appropriate for the requirements of the European rail market. However, we believe that it is important for the following issues be addressed in subsequent EU legislation; these are:

- The inclusion of all services;
- Independence; and
- Enforce implementation.

Inclusion of all services

8.5 Chapter 6 showed that there are a number of relevant rail-related services that have been omitted from Annex II of the Directive (in addition to those that we have already discussed in the report that do not appear in the Annex such as the provision of training). While it would be impracticable to seek to include all the potential activities that could come under the category of rail-related services, we consider that the inclusion of the following services would add to the effectiveness of the access liberalisation process, without leading to over regulation:

- Access to water replenishment facilities and the provision of water;
- Access to toilet emptying facilities; and
- Access to driver and other staff training facilities.

8.6 Access to these facilities should fall under the categories listed in paragraph 1 of Article 5, while the services within these facilities should be included in the categories listed in paragraph 2 of Article 5.

Independence

8.7 We consider that the Commission should also extend the concept of independence, to include also the requirement that the operator of a rail-related service facility should be independent from the user(s) of the facility in question (typically, these are railway undertakings, as set out in the previous chapter.) As an intermediate step, The Commission may wish to encourage the development of Use-It-Or-Lose-It provisions to ensure the more effective management of rail-related service facilities, and their wider usage by third parties.

Enforce implementation

8.8 Finally, as discussed in Chapter 6, there are a number of areas where national legislative implementation has not been completed, or where some of the implementation measures have not complied with the requirements of the Directive. The networks where these situations exist are shown in Figure 6.4. In these cases, the

Commission needs to enforce the implementation process and ensure that the national laws are correctly drafted and enacted. This observation refers not only to the overall implementation process itself, but also to the differing levels of importance that have been given to rail-related services in some national legislation, despite the specific provisions of Directive 2001/14/EC: more generally it also refers to the manner in which national legislation has interpreted EU legislation.

- 8.9 Apart from these modifications, we consider that it would not be appropriate to provide additional legal text addressing access conditions at an EU level, given the different national contexts within which rail networks in Member States are operated: there is a risk that an extended text might conflict with some of the (legal) practices being undertaken on each network, such as the allocation of responsibilities for the provision of categories of rail-related services.

Formulation of guidelines for rail-related services

Facilitating the interpretation of the Directives

- 8.10 When looking at the markets in rail-related services, it is clear that there are substantial (macro and micro) differences between Member States, as regards the interpretation, procedures and practices applied in relation to access conditions and regulations: it is probable that these differences will tend to diminish the likely scope for growth in these markets, and in the overall European rail market itself. We do not consider that it would be ideal to implement an assertive approach to the overall regulation of rail-related service facilities: for example, in the case of some of the rail-related services we have reviewed, there is already a high probability that a freely-functioning market will develop. However, in some cases, it may be necessary to provide further detail about the manner in which the Directive should be interpreted: this would facilitate the further interpretation of regulations and requirements in cases where the provisions of national legislation and rail industry codes are currently unclear, and should help to avoid discrimination between the parties involved.
- 8.11 Guidelines could be issued to clarify that it is not necessary to be a railway undertaking to undertake some of the rail-related services included in Directive 2001/14/EC (for example driver training, driver leasing, rolling stock leasing, port operations, etc.), and that, as such, there is no *de facto* limitation on the provision of such services. This would limit the misinterpretation of the role of a railway undertaking, as has occurred in Belgium where a provider of rail staff leasing services has been denied access to the market on the basis that it is not a licensed railway undertaking, the Commission may wish to clarify and provide more detail on the concept of “ensuring traction”, as included in the definition of a “railway undertaking” within the Directive. In any case, the Belgian interpretation seems flawed, as a service provider does not need to be a railway undertaking, and as a result, is not required to obtain a rail operating licence.

- 8.12 Furthermore, the publication of a number of guidelines could provide a clearer interpretation of the intent of European legislation; for example, as to Article 7 of Directive 2001/14/EC in respect of charging for rail-related services. In Chapter 5, we noted that although there are specific requirements within Article 7, they have been interpreted in many different ways. Accordingly, it would be helpful to provide examples of the way in which to interpret the fact that charges imposed in the event of there being only one supplier should “...relate to the cost of providing [the service]...”
- 8.13 As shown in Chapter 6, the provision of clear guidelines on the definition of the concept of a “viable alternative” facility or service, and the context in which it is applicable, should also facilitate its application by regulatory bodies and national courts.

Avoiding discrimination through different standards

- 8.14 Guidelines would be useful in ensuring that there was no discrimination through differing (technical) standards. A prime example of this is the conditions for access to, and for the supply of services within, diesel fuelling stations. In Italy, the principle of self provision applies -that is any operator can refuel its rolling stock at any time at its own facilities; in Germany, rolling stock can only be refuelled at DB fuelling facilities; in Belgium rolling stock can be refuelled at the facilities operated by the incumbent, but this must be done by the incumbent’s staff. None of these conditions can necessarily be considered to impose discriminatory access to fuelling facilities and services: cumulatively, however, the varying situations in individual networks could have a significant negative impact on the cost base of a new entrant rail operator seeking to provide international services, and thus represent a barrier to entry or growth for the railway undertaking.
- 8.15 In this specific case, the publication of guidelines (subject to national safety and environmental requirements) on the appropriate way to ensure that access to, and the pricing of, fuelling facilities and refuelling services is not discriminatory, would improve the transparency of the market, while not disturbing national regulations and requirements that are usually applicable on a cross-industry basis. Furthermore, the publication of such guidelines should contribute to the avoidance of discrimination based on spurious issues of technical compatibility. The guidelines might also be extended to cover issues relating to pricing for services and cost-reflectivity. In this case, the definition of some principles in relation to cost estimation and cost recovery, and an analysis of best practice in this field, could aid the definition and calibration of charging structures: however, we note that experience in other sectors and in rail infrastructure charging shows that this will not be a simple task.

Further information in network statements

- 8.16 As shown in Chapter 5, our case study demonstrated that access conditions for rail-

related services and facilities remain unclear in a number of networks. We recommend that the series of guidelines mentioned in this section should also specify the minimum additional information to be included in national Network Statements, to increase the transparency of information about rail-related services and facilities. This additional information should comprise:

- The opening times of the facilities;
- A list of the documentation required to access the facility (if any is required);
- Whether there is capacity available in the facility;
- The charges for accessing the facility;
- The services and equipment in these facilities; and
- Contact details of the persons necessary to arrange access to these facilities (if different from the One-Stop-Shop provided by the infrastructure manager).

8.17 As mentioned in the report, this extra information may best be placed in a supplement to the Network Statements where the infrastructure manager can attach a relevant disclaimer in relation to third party information.

8.18 The preparation of these guidelines should be a task that is carried out through cooperation between national regulatory bodies, in accordance with the statement made in Article 31 of Directive 2001/14/EC, with the assistance and supervision of the European Commission and, potentially, some technical experts from the rail industry to provide a pan-European view. Within such a forum, various network specific issues can be reviewed and any principles of wider relevance can be incorporated into a set of guidelines drafted to meet the requirements of all networks.

Common approaches to ensuring access to rail-related services

Template documentation – product catalogues

8.19 The preparation of template documents, whose use can be standardised across all networks to facilitate access to rail-related services, is another possible way to improve transparency and efficiency. A positive outcome may be attained in this case by a process of co-operation between rail industry stakeholders under the guidance of an established international rail industry body, following the achievement of RailNetEurope in respect of the Network Statement. National infrastructure managers could be asked to develop a common format for a product catalogue of certain rail-related services, similar to that prepared already in some networks (e.g. Germany and Austria.) Ideally, such a catalogue would not only provide basic details of the charges for access to the service facilities in question, and the charges for the provision of specified services; but it should also contain more extensive information on the detailed requirements for access.

- 8.20 In order to avoid imposing an excessive workload on the owners and operators of rail-related service facilities, the scope of the initial catalogue could be limited to a subset of facilities -for example, to those directly linked to the Trans European Rail Freight Network, or to the most intensively used rail-related facilities. Ideally, this initiative should be taken forward as a pilot project, to ensure that the concept can be implemented effectively, to establish that the catalogue meets the needs of rail operators, rail users and other stakeholders, and to review the appropriate range of information to be included in the catalogue. Subject to completion of a satisfactory pilot project, the catalogue could subsequently be extended to cover other facilities and services.

Template documentation – ‘On-demand’ documentation

- 8.21 An alternative solution, limiting the extent to which rail infrastructure managers were obliged to collate and provide third party information that could change frequently for commercial reasons, without necessarily meeting a clear requirement from prospective users, might be to develop a common template document for use on an ‘on-demand’ basis. Facility owners and operators would be required to complete this template document, following an access request from a railway undertaking seeking to use a particular service facility. This would still improve the transparency of the access regime for rail-related facilities and services, and hence facilitate traffic growth, but importantly, it would mean that responses could be targeted to meet the known requirements of prospective users. Moreover, the approach would avoid smaller networks (e.g. Northern Ireland, Luxembourg or Lichtenstein) having to set up procedures for certain services that might never be demanded, whilst enabling them to concentrate on developing effective arrangements for services that are most commonly required.

Coordination activities

- 8.22 The Commission could facilitate the development of either or both of these initiatives by the establishment of specific working groups with the aim of supporting the rail liberalisation process, or by encouraging the coordination of activities through a body such as RailNetEurope, or the European Rail Agency. Of the two bodies, RailNetEurope would be the best placed to take forward activities concerning rail-related services, given its existing extensive knowledge base of the capability and capacity of each constituent rail network, and the experience obtained in coordinating Network Statements: an initiative on rail-related services would represent a natural progression of its current activities. While the range of services to be addressed would require agreement, the coordination of activities through RailNetEurope would seem to offer a sensible solution to the effective collection of necessary information, without imposing excessive administrative burdens or regulations on stakeholders.
- 8.23 One of the common problems identified in the RAILIMPLEMENT analysis was that the key industry procedures and activities that are required by the First Rail Package,

such as the licensing and safety certification framework, had still not been developed and published on a significant number of networks. This was primarily because no other operator had asked for access at that stage, but, importantly, it also reflected the inexperience of a large number of the parties involved (notably the regulatory and/or licensing authorities) in setting up the necessary transparent and non-discriminatory frameworks. As a result of their participation in working groups and international cooperation initiatives (including those already sponsored by the Commission such as the regular meetings of the Regulatory Bodies), the parties concerned have now implemented appropriate frameworks on a significant proportion of the national networks in question, and it has now become a simpler task for potential new entrants (and incumbents) to obtain licences and other certification.

Gathering of further network information

- 8.24 Many of the regulatory and Ministerial authorities in Member States have little practical information and quantitative data relating to their respective national networks, and little prior experience of the rail sector itself: as a result, they are forced to work from a basis of severely imperfect information, which, in turn, makes it difficult to effectively regulate and determine such issues as access prices for rail-related facilities. In addition to the development of guidelines and a common approach to the exchange of information and experience as described above, the Commission may wish to encourage national regulatory bodies to acquire detailed financial and technical information relating to their national rail networks from infrastructure managers, in order to ensure that informed estimates of relevant costs can be derived.
- 8.25 The situation is similar with respect to rail-related services and facilities. A number of networks have not yet prepared a framework or a product catalogue for these items, because there are currently no requests for access or market entry and, furthermore, because the bodies concerned lack experience in defining the appropriate contents of a catalogue, and developing the necessary frameworks. By using the lessons learnt during the licensing and safety certification process, and from an analysis of the best practice approaches already introduced, as set out in Chapter 5, the main limitations to transparency and market access for rail-related services can start to be eliminated, encouraging market growth and the overall development of European rail sector.

Conclusions

- 8.26 The recommendations for action included above are options that the Commission may wish to take forward in its future review and recast of the First Package of Directives. We wish to emphasise again that the majority of stakeholders interviewed mentioned that, even though they had encountered some problems with the provision of rail-related services, they saw these mainly as teething problems that should be resolved as the market matures; nevertheless, they also commented that public authorities should not be complacent and allow such problems to persist. This observation should be qualified by the statement that some stakeholders chose not to respond to our survey,

while some other networks have not yet experienced or identified the problems that may emerge as markets are fully opened and as integration with other networks increases, due to the absence of domestic competition between rail operators.

- 8.27 The analysis included above has shown that while some minor modifications should be made to existing European railway legislation, and while some actions should be pursued to improve the development and transparency of the market in rail-related services and facilities, the generic legal framework currently in place is adequate to correctly incentivise the European rail industry. Except for the specific changes that we have mentioned, any further detailing of the legislation could well introduce rules and regulations that are too onerous for the industry, and that may constitute a barrier to entry and business development, rather than a stimulant for further growth.